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I.—*Excavations at Kusura near Afyon Karahisar*

By Winifred Lamb, *M.A., F.S.A.*

Introduction

Abbreviations used in this paper

A.H. = E. F. Schmidt and von der Osten, *The Alishar Hüyuk* (*O.I.P.* vii, xix).
A.J.A. = *American Journal of Archaeology.*
Bogazköy = Bittel, *Bogazköy, Neue Untersuchungen in der Hethitischen Hauptstadt.*
B.S.A. = *Annual of the British School at Athens.*
Δ.Σ. = Tsoundas, Αἱ Προιστορικαὶ Ἀκροπόλεις Διμηνίου καὶ Σέσκλου.
Frankfort, *Studies* = *Studies in the Early Pottery of the Near East.*
J.R.A.I. = *Journal of the Royal Anthropological Institute.*
P.F.K. = Bittel, *Prähistorische Funde in Kleinasien.*
P. of M. = Evans, *The Palace of Minos at Knossos.*
Schliemann, *Bericht* = Schliemann, *Bericht über die Ausgrabungen in Troja im Jahre 1890.*
SS. = H. Schmidt, *Heinrich Schliemann's Sammlung Trojanischer Altertümer.*
Thermi = W. Lamb, *Excavations at Thermi in Lesbos.*
Türk Tarih = *Türk Tarih, Arkeologya ve Etnografya Dergisi.*

The progress of archaeology in Anatolia during the last few years has enabled us to distinguish certain cultural areas of which the chief are (i) the western and south-western, and (ii) the central and eastern (fig. 1).[1] Troy belongs to the first group, though its position, its importance, and its foreign elements prevent us from considering it a type-site; Alişar and Bogazköy represent the second group. The differences between east and west, manifested in architecture, ceramics and the smaller utensils, though most conspicuous in the second millennium, exist to a certain extent in the third. Less characteristically Anatolian is the country south-east of the Taurus, whither alien influences from Syria and the east could penetrate easily; while the developments in the extreme north-east are still too obscure to make discussion profitable.

Between the centre and the west are tracts almost totally unexplored from the prehistoric point of view, in particular the region round Afyon Karahisar, which must have been on the lines of communication between the well-populated uplands round Ankara on the one hand, the Maeander valley and the fertile south-western plain on the other. A site somewhere in the neighbourhood of Afyon would obviously repay excavation, and, with a view to choosing one, I obtained a permit to travel thither from Eski Şehir via Emet.

As the results of the journey may be of interest, I will briefly summarize them. There are no prehistoric remains near Emet, but the well-known jug in the

---

[1] For a complete account, with map and list of sites, see Bittel, *P. F. K. passim.*

Ashmolean may have come from a mound on the road between it and Çavdarhisar (Aezani). The plain round Afyon is rich in prehistoric towns and villages,[1] some of which have yielded hand-made vases, black and red, of the normal west Anatolian class, together with smaller objects—terracotta arcs like fig. 15, nos. 1–4, and small animals like fig. 11, no. 3—which are typical of central Asia Minor. In the higher country to the west, there is a fine site at Egret from which the material seems to be of the same character as that from Afyon; to the south-west, the plain of Sandikli, occupied in Roman times by the Pentapolis, contains numerous settlements, many prehistoric, some of later date. Among all the places which I visited, Kusura, 13 km. south of Sandikli, and 55 km. south-west of Afyon Karahisar, seemed the most promising, first because of its excellent position on one of the routes to the south, secondly by reason of the unusual potsherds with wide horizontal ribs which I picked up on the surface.

The Turkish Government not only granted the permit for the excavation, but gave me every facility and encouragement, and kindly allowed the expedition to live in the village school. Dr. Hamit Koşay, Director-General of Antiquities and Museums for Turkey, supported the undertaking and gave us the necessary help from head-quarters: to Bay Süleyman Gönçer, Director of the Afyon Museum, who accompanied me during my travels, I am indebted not only for the assistance which he has given us all at the Museum, but for putting at my disposal the results of his knowledge of ancient sites in the villayet of Afyon, and for suggesting the first visit to Kusura, which he had already noted as a productive spot. The expedition owes much to the courtesy and experience of Bay Haydar Sümerkan, who was present at the excavation in the capacity of Inspector. The Vali of Afyon and the Kaimakam of Sandikli showed us every kindness. To all these our thanks are due.

In 1935 I spent a month at Kusura conducting a preliminary *sondage*, accompanied by Miss E. W. Gardner; in 1936 I worked for ten weeks, assisted by Mr. and Mrs. Stewart, by Miss Rachel Clay, and by Mr. Macartney, who drew the finds besides acting as architect.[2] That the work is not yet finished will be obvious from the following preliminary report.

The remains at Kusura, situated on rising ground to the east of the Sandikli plain, consist of a cemetery, described by Mr. Stewart on pp. 54 ff., and of a mound, the ancient town, about 400 m. long and 14 m. deep at its highest point (pls. I, II, VIII, 1). Its width cannot be estimated accurately because the northern side has been cut away by villagers digging material for mud-brick; on this side the deposits are about 1·5 m. lower than the present surface of the surrounding pastures, so that their total depth is 15·5 m.[1] Here a stream runs and the ground is marshy, though farther south virgin soil rises, forming the kind of hillock that attracts early settlers: we have not yet ascertained its maximum height, but know that it exceeded 4 m.

---

[1] The material will be published by Mr. S. Gönçer, Director of the Afyon Museum.

[2] The maps and drawings are by Mr. Macartney with the exception of figs. 1-4 and items on figs. 5, 10, 17, 23, 24. Miss Gardner's survey of the mound in 1935 is incorporated in pl. II.

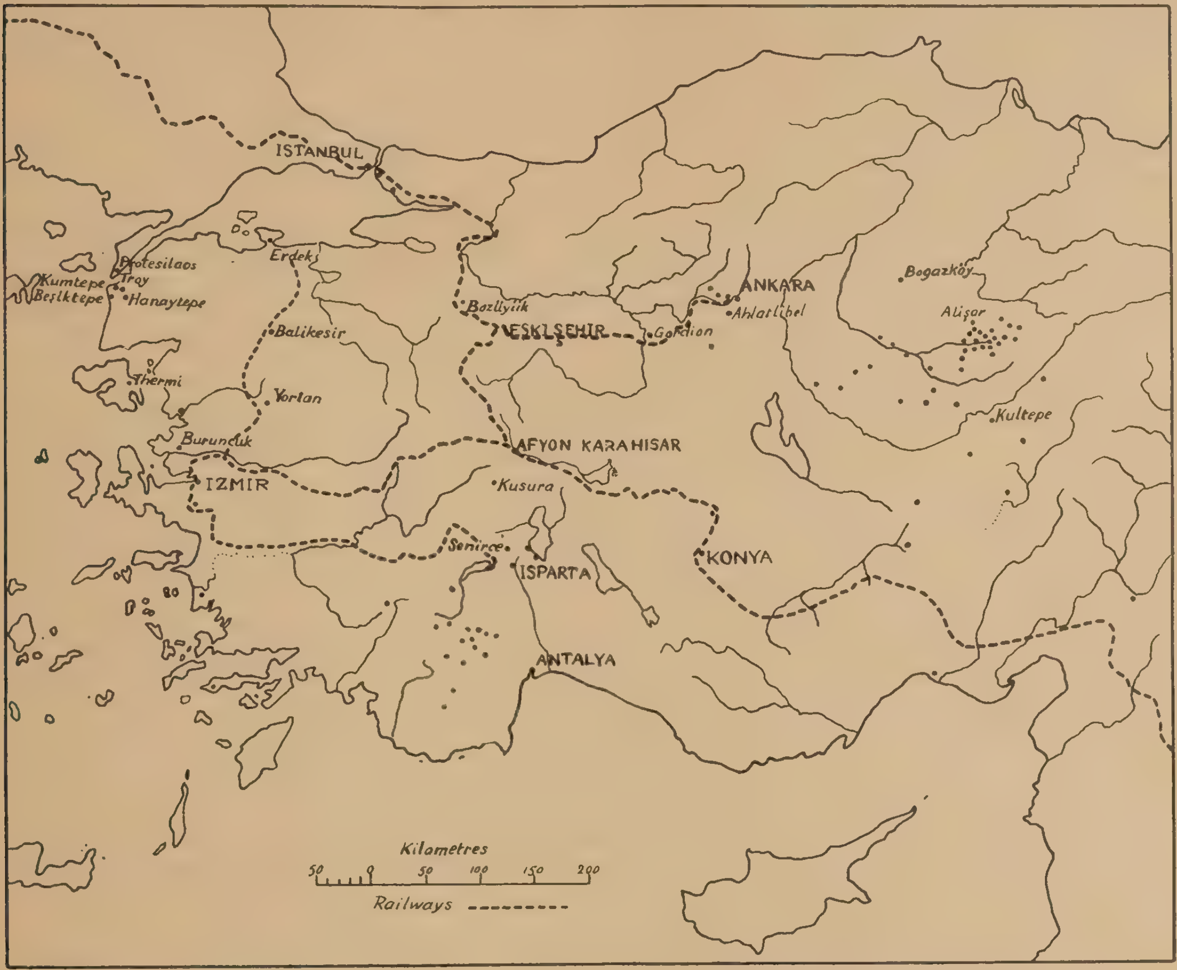
ISTANBUL
Protesilaos
Troy
Kumtepe
Beşiktepe
Hanaytepe
Erdek
Balikesir
Thermi
Yortan
Buruncuk
IZMIR
Bozüyük
ESKIŞEHIR
Gordion
ANKARA
Ahlatlibel
Bogazköy
Alişar
Kultepe
AFYON KARAHISAR
Kusura
Senirce
ISPARTA
KONYA
ANTALYA
Kilometres
50 0 50 100 150 200
Railways

Fig. 1. Anatolia, showing chief sites mentioned in this paper

An extensive area, numbered III, VI–VIII, has been cleared on the summit of the artificial mound, revealing the latest period of habitation. Here we have only descended 1·5–2 m. On the face of the cliff made by the villagers' depredations, areas I and II have been dug to virgin soil, but neither of them can be considered with certainty to overlap the period represented by III, VI–VIII. Area V is still in progress. All these are in that part of the mound which has been expropriated. In the southern part, which belongs to various local proprietors, two test pits, IV and IX, have both reached virgin soil (pl. II).

---

[1] An artificial datum, called 100 m., was used for convenience during the excavation, and the corresponding numbers are quoted in this publication because they are shorter, but the actual levels are given in the map, pl. 1. We owe accurate information as to the height above sea-level to Dr. Fiedler, who is in charge of engineering operations in connexion with the railway. Miss Gardner connected the levels he supplied with the mound: our 100 m. point = 1075·15 m. above sea-level.

The results of these operations indicate the main stages of development on the town-site, but do not give its history in detail. It is convenient here to summarize what our conclusions have been, before giving an account of how they were reached.

Kusura was first occupied in the Chalcolithic Age about the close of the fourth millennium. To this stage belongs our first period, of which the products are not easily paralleled, represented in area II, possibly also in IX. The pottery develops steadily into that of our second period, where it resembles in many ways certain vases previously known from the south-west. The end of this phase is marked by the appearance of red-cross bowls like those of Troy. The Trojan bowls are datable about 2000 B.C.,[1] and ours should be more or less contemporary. If so, our second period covers most of the third millennium. The gradual introduction of wheel-made wares prolongs the transition from the second period to the third, which, when fully established, shows many new elements: the pots differ both in form and in fabric from those previously in use, connexions with the Hittite interior become apparent, while certain features (pp. 24, 41, 43) in the upper strata suggest that the town survived, though not for long, after the beginning of the Iron Age.

I have called the earliest period A, the second B, the third C: in describing the finds, I have usually stated the period without mentioning the find-spot, first because there is not sufficient architectural context to make the latter interesting, secondly because a preliminary report has not unlimited space. I have, however, published fuller details concerning the more important objects from area V, to correspond with the description on pp. 8–11.

It will be observed that the distinction between periods A and B depends only on the pottery and the comparative rarity of metal, whereas the transition from B to C is illustrated by pottery, architectural remains, and many of the smaller objects.

STRATA AND BUILDINGS

Period A (Area II, ?IX)

The earliest settlers at Kusura used stone implements and a few copper pins: it would be interesting to know whether the latter were made on the spot or imported. The pottery which these settlers produced, though it testifies to their skill and experience, does not tell us whence they came.

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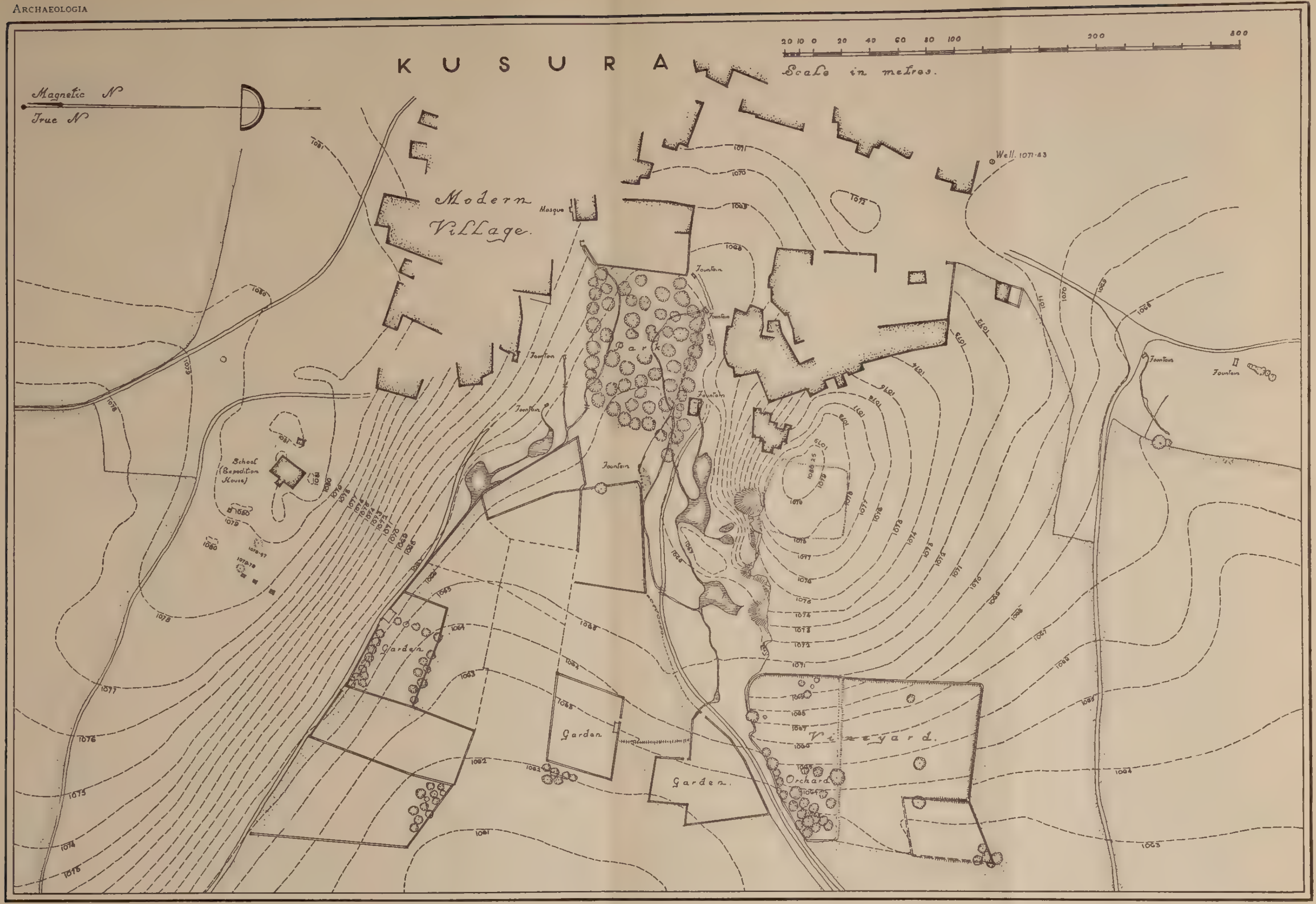
[1] *A.J.A.* xxxviii, 230, 233, xxxix, 562; *Thermi*, 210.


KUSURA
20 10 0 20 40 60 80 100 200 300
Scale in metres.
Magnetic N
True N
Modern Village.
Mosque
Well. 1071·43
Fountain
Park
School (Expedition House)
Garden
Garden
Garden.
Vineyard.
Orchard

Kusura : general survey

Published by the Society of Antiquaries of London, 1937

The deposits which are shown by the pottery to represent this period attain a maximum depth of 1·75 m. in area II. Since this is near the edge of the mound and close to the marshy soil by the stream, the absence of buildings is not surprising: no doubt they were at a somewhat higher level. Area IX contained nothing of stratigraphical interest, and even the sherds found in its low levels were undistinguished. The following paragraphs are from Miss Clay's report.

Excavation of the lower levels of area II showed that the change from the A pottery to the B pottery (see below, p. 16) was certainly a gradual development, rather than an abrupt break. Usually the A element was found below 89·80 m. but a few examples of class B occurred as low as 89 m.

In the eastern half of the area, virgin soil appeared at 88·9 m. (S.E., S.W., and N.W. corners), 87·75 (N.E. corner) and 88·17 m. (centre). The stratification in the north-east corner indicated that a pit had been dug here, the filling of which was composed of successive layers of black burnt material with quantities of charcoal and pottery.

Two structures have been considered as transitional between A and B on account of the pottery associated with them. This was particularly indefinite in character, with no distinguishing mark of either period.[1]

The lower of the structures was a hearth at 89·9 m. Little of it remained except a circular burnt area surrounded on three sides by hard mud-brick.

Partly covering the hearth was a circle of stones at 90 m. with a diameter 3·8 m. Large flat stones (average dimensions, 0·35 × 0·4 m.) as well as rough irregular ones were used. A projection 1·1 × 0·6 m., composed of smaller stones, lay on the north side. There was no sign of any superstructure. *R. C.*

Period B (Areas I, II, IV, V, IX)

General characteristics. The chief building-material is mud brick, though in some walls the bricks themselves cannot be distinguished. Potsherds are often embedded in the mud, and four jugs were actually enclosed in one of the walls (pp. 9, 19), recalling the vase that was concealed among the stones in the south-west bastion at Thermi.[2] Most walls have been faced with whitewash, as in other Anatolian sites. A few courses of stones are sometimes, but not always, used as a foundation. Floors of beaten earth can be recognized by their hardness and colour or by the deposits of potsherds which occasionally lie on the surface. The areas are not large enough to reveal complete house-plans, but we know that the rooms were small and quadrangular. Hearths, either detached or backed against a wall, vary in shape and usually rest directly on the ground: ovens, such as those described on pp. 8, 10, may have a substratum of potsherds: pits, possibly the equivalent of the house-pits or *bothroi* found elsewhere,[3] have been observed but we cannot tell whether they were outside the rooms or inside. They are not carefully lined as in period C (pp. 12, 13) and are deeper, the three excavated examples being 0·75 m., *c.* 0·70 m., and 0·125 m. deep respectively.

Pits IV and IX do not merit description; our knowledge of the buildings of period B is obtained from areas II and V, and from pit I. The account of area II is by Miss Clay.

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[1] In this part of the trench the wares below 89·45 m. are definitely A, those above 90·10 m. definitely B.

[2] *Thermi*, 21.

[3] *P.F.K.* 29; *Thermi*, 61 ff.

Area II was situated on the north side of the mound, its northern limit reaching the bottom of the slope. The drop between the northern and southern limits of the area was 3·3 m.

The periods were not clearly defined here, but the pottery evidence showed that the structures in the upper half of the area belonged to the middle period (B). For the transitional phase and the early period A, see p. 5.

A circular construction at 90·56 m. (pl. III, 2) consisted of a mud-brick edging 0·04 m. wide enclosing a core of mud-brick debris (diameter, 2 m.). No trace of the northern half occurred until 90·2 m., but below this level the circle was complete. On the south side was a small semicircular mud-brick projection edged in the same way. When the inner debris had been removed, it was seen that the whitewash on the inside of the mud-brick edging descended 0·32 m. and turned inwards at the bottom as though it had formed a floor; yet no trace of one remained. The purpose of the construction remained obscure.

A remarkable structure, sealed by a level of thick yellow clay, was discovered at c. 92 m. (pl. III, 1, 2, 5). Its outer boundary was formed by the foundations of a mud wall, roughly semicircular in shape, faced with flat upright limestone blocks (*a* on figs. 2, 3). Traces of the inner face of this wall appeared, and remains of the mud-brick superstructure coated inside with whitewash were found on the south (*a a*) rising to a height of 91·93 m. On the north, the stone facing with decomposed mud brick above it extended 1·5 m. in a westerly direction beyond the construction described below.

Within the outer wall (*a*) was an inner semicircular mud-brick wall (figs. 2, 3 *b*), average width 0·3 m., laid on rough irregular stones and flat stone blocks. The depth of these stone foundations was 0·2 m. and they were faced on the outer side with flat blocks, one of which, 1·32 m. long, formed part of both inner and outer walls on the north. The area thus enclosed by the inner wall (*b*), 1·7 m. × 1·72 m., was completed on the west by the narrow mud wall (*d*), 0·07 m. wide,[1] coated inside with whitewash. Walls (*a*) and (*b*) joined each other on the south, and the white facing of the outer wall (*a a*) continued round on the inside of the inner wall (*b*), sloping inwards on the north and east as though forming a surround.

In the south-west corner, remains of a mud-brick foundation (figs. 2, 3 *c*), enclosed a small area measuring 1 m. E.–W. and 0·9 m. N.–S. Here there was much ash and signs of burning, above traces of a mud-brick floor. A large cavity, 0·3 m. deep, 0·7 m. in length, had been cut into the floor and was filled with ash. The space (*e*) between (*c*) and the inner wall (*b*) was composed of hard mud brick, varying in width between 0·63 m. on the east and 0·29 m. on the north.

Two vent-holes were found in the west wall. One, formed by two holes (0·10 m. in diameter) on the inner side, had a single exit on the outer side. The second was a simple, single vent. The third had its entrance in the south wall but its exit was found on the outer side of the west wall.

Owing to the fragmentary nature of the construction, and from lack of further evidence, the following remarks as to its purpose must be regarded as merely tentative suggestions. As only a few sherds were found while excavating the structure, it is

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[1] In figs. 2, 3, it is drawn as though wider; the bad preservation of the outer face makes the original dimensions uncertain.

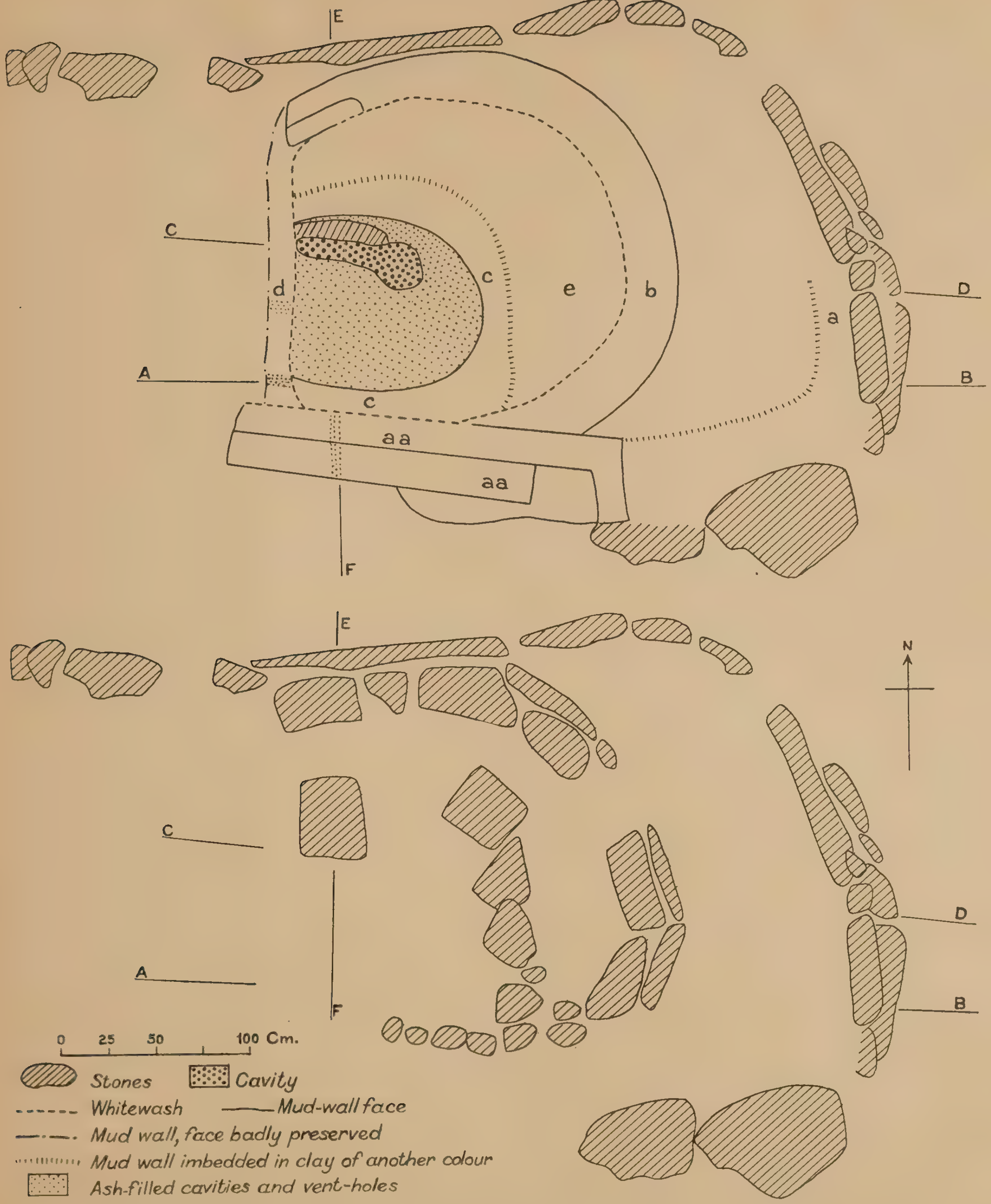

E
C
d
c
e
b
a
D
A
B
c
aa
aa
F
E
N
C
D
A
B
F
0 25 50 100 Cm.
Stones
Cavity
Whitewash
Mud-wall face
Mud wall, face badly preserved
Mud wall imbedded in clay of another colour
Ash-filled cavities and vent-holes

Fig. 2. Plans of large oven, area II. Above, mud-brick and stone walls; below, stone foundations

unlikely that it was used for a potter's kiln. There remains the possibility of a bread oven, and any reconstruction would resemble the large bread ovens used in Anatolian villages to-day. If the outer wall (*a*) represents the foundations of the bakehouse wall, the entrance must have been on the west.[1] The actual oven, a vaulted chamber within the bakehouse, was built against its south wall. The foundations of the oven wall (*b*) were well preserved. The oven mouth thus opened direct into the bakehouse, and possibly a single door was used for both stoking the fire and putting in the bread, which would have been stacked round the fire on the mud-brick shelf (*e*) next the oven wall. The fire was made on a slightly lower level and the draught regulated by the vents. A difficulty arises from the fact that the west wall was preserved to a height of c. 0·40 m. above the shelf, so that the entrance to the furnace must have been on a higher level. It is not easy to conceive how the fire was stoked unless this was done through an entrance lower down on the west wall of which no trace remained. Unfortunately, as yet no similar oven has been discovered in Asia Minor with which this may be compared.[2]

A smaller oven at 92·66 m. was oval, 0·20 m. high, with a hard-baked terracotta floor reinforced by a mosaic of broken potsherds (pl. III, 8). The remains of the surrounding rim of clay suggested the base of a destroyed roof (cf. *Thermi*, 60, pl. VI, 3, 7). An earlier stage was represented by a lower yellow terracotta floor above a similar broken potsherd level. There was no sign of any stone foundations, but the whole rested on a heavily burnt stratum 0·07 m. deep which extended 1·8 m. to the west of the hearth. *R. C.*

The remains encountered in *area V* seem to be typical of the site at this stage but are in many ways curious and occasionally inexplicable. The area is small, 9 × 13 m. at its maximum:[3] we limited its extent because, with few supervisors, and with a site where everything was unfamiliar, slow and careful digging was essential; on the other hand, we made our cutting deep enough to overlap the stages represented in pit II because a complete sequence of development was much to be desired. During the next campaign it should be easy to uncover the whole of the buildings of which only parts have been cleared to date, and progress can be quicker now that we realize what deep deposits of earth may lie between the succeeding habitation-levels. Of these levels, there were only six certain and two possible ones in the seven and a half or six and a half metres which intervene between the present base of the pit at 92 m. and the surface at 99·40–98·35 m. below our datum.

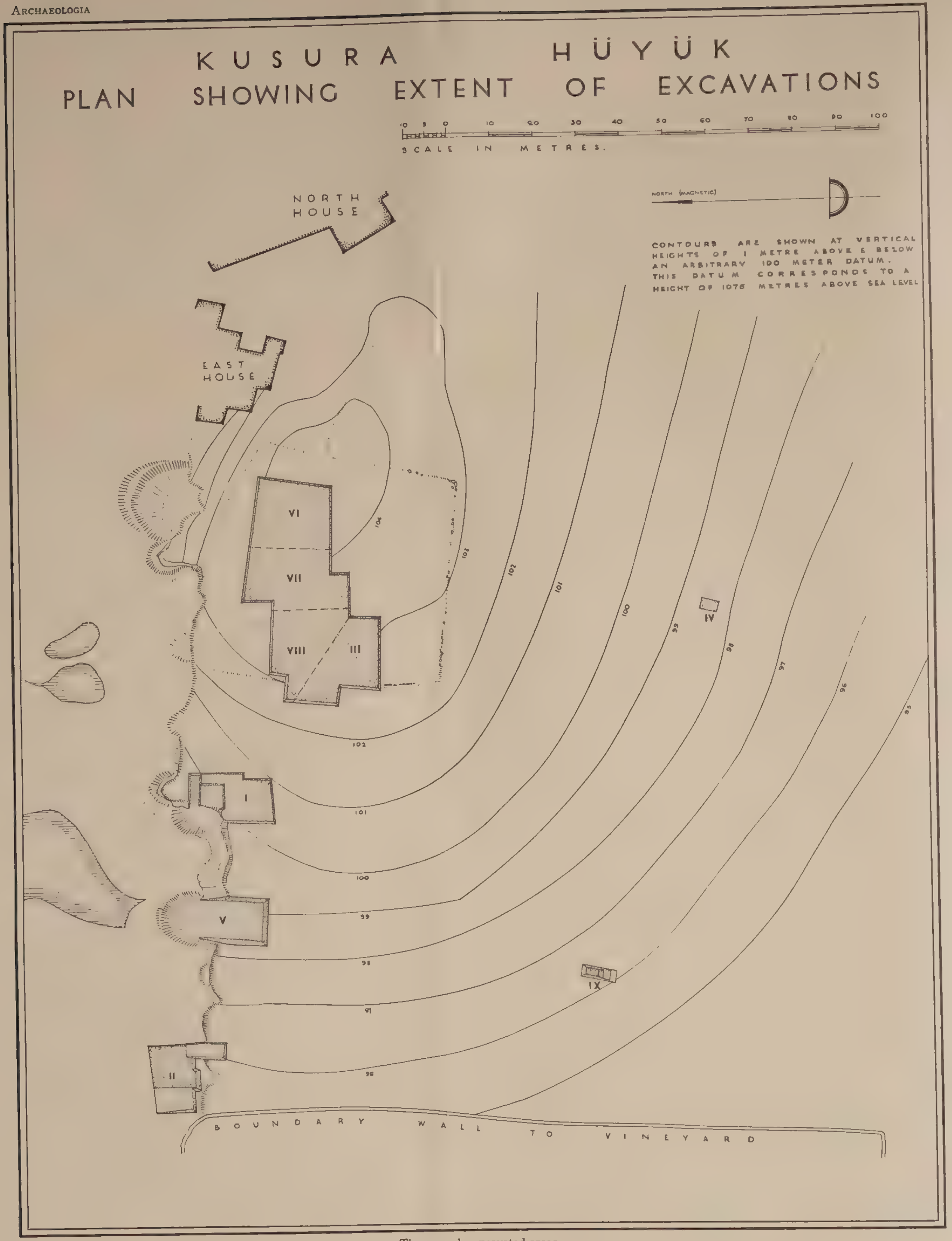
To the lowest of these, at *c.* 92·10, belong the walls and stones as illustrated on pl. III, 4. One of the walls cuts off a room or court which lies behind it as seen in the photograph. I shall call it 'room 3', though we do not know whether it was roofed in or open. The foundation of the wall has not yet appeared, but the floor is marked by a hard yellow deposit. The room was reoccupied three times or more, and the wall preserved to a height of 2·75 m., but practical considerations forced us to remove the upper

---

[1] The thick yellow clay which sealed the deposit (p. 6) may be the remains of the bakehouse roof, whether flat or domed we cannot say.

[2] The oven at Olynthus was identified by the excavator as a pottery kiln, but the fire, as at Kusura, was regulated by an elaborate system of vents: cf. Mylonas, *Excavations at Olynthus*, i, 12 ff.

[3] This is, of course, larger than the area shown in pl. II, which was the surface area at the top of the cliff. Great care was taken to distinguish the stratified earth from the fallen earth on the cliff-side.


KUSURA HÜYÜK
PLAN SHOWING EXTENT OF EXCAVATIONS
10 5 0 10 20 30 40 50 60 70 80 90 100
SCALE IN METRES.
NORTH (MAGNETIC)
CONTOURS ARE SHOWN AT VERTICAL HEIGHTS OF 1 METRE ABOVE & BELOW AN ARBITRARY 100 METER DATUM. THIS DATUM CORRESPONDS TO A HEIGHT OF 1076 METRES ABOVE SEA LEVEL
NORTH HOUSE
EAST HOUSE
VI
VII
VIII
III
IV
I
V
IX
II
104
103
102
101
100
99
98
97
96
95
BOUNDARY WALL TO VINEYARD

The mound: excavated areas

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part. This was fortunate, as the four jugs mentioned above (p. 5) were embedded inside it. Courses of bricks could be discerned in some places: in others, layers of brownish mud alternated with the yellow. The edges were quite easy to disengage from the surrounding soil, all the more so as large patches of whitewash remained on the south side, and small patches on the north side. A step-like appearance was given to the surface, and set-backs cut on the sides by the workmen, but each really corresponds to the appearance

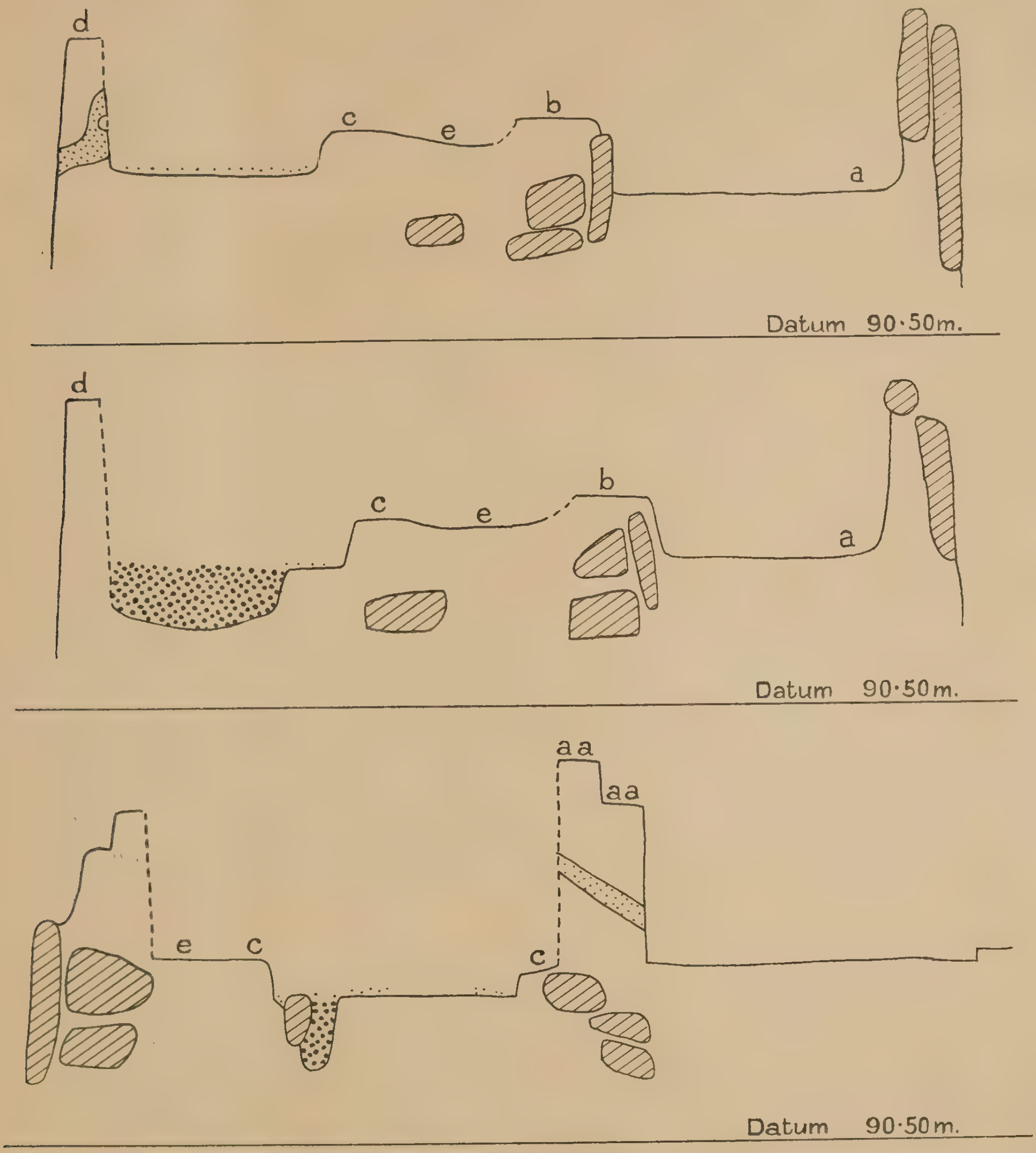

Fig. 3. Sections of large oven, area II. Scale and formulae, as fig. 2

of the soil during excavation. They may have been caused by the ends of the original bricks, laid in a fantastic manner, or by irregular decomposition of the surface: unfortunately there is not enough of the white coating here to guide us. The little enclosure on the side of the wall recalls the small stone enclosures in corners of rooms at Thermi.[1]

Inside room 3, the floor at 92·10 m. noted above was succeeded by one at 92·90 m. and a still higher floor at 93·20 m. which had patches of whitewash lying on its hard yellow surface, and was contemporary with the oven which is seen protruding from the side of the trench on pl. III, 7. This looks as if it had been made from a jar laid horizontally, but the under-side proved to be quite flat, though its edges turned upwards as though to form the oven dome. Beneath it were potsherds in poor condition: perhaps these represent the original pithos, the hard surface visible in the photograph being merely a burnt brick lining. The edges were chipped off in antiquity at a height of *c.* 0·02 m. Beside the oven was a deposit of other sherds, some seeds, and a small circular hearth.[2] The seeds have been identified by Mrs. Reid as *Triticum monococcum* L., the type of wheat found at Troy.

That many walls have stone foundations is shown by the view of the south-east corner of V (pl. III, 3). On the left are three courses of a stone wall, of which the top is at *c.* 93·90 m. The top of the other stone wall, the low one, is at 92·58 m. Behind this at a higher level are several mud-brick walls,[3] one of which turns at right angles at either end to disappear into the face of the trench: the white facing, which survives in irregular patches looking like stones in the picture, actually belongs to the farther or back side of the wall: the wall itself had to be removed.

Associated with a habitation-level at *c.* 94 m. were some interesting phenomena: (1) A kidney-shaped platform of sun-dried brick, *c.* 0·40 m. high, with a depression in the centre and traces of charred wood and whitewash beneath it, which emerged at all sides like the edges of a saucer. (2) A hearth or oven without any substratum of stones or sherds. (3) Three deposits of pottery, one connected with (4) a pithos (fig. 8, no. 3) of which one end was supported on a mud-brick erection, while the other, at a lower level, rested on a terracotta platform. The earth in the pithos was dark as though from organic matter and contained a skeleton in very poor condition.[4] (5) At the same level occurred the pithos (pl. III, 6; fig. 8, no. 1) enclosing the skeleton of a child accompanied by one copper ring.

At 94·50 m. the character of the deposits changed, and at 94·60 m. a skull and some disconnected bones were found above room 3.[5]

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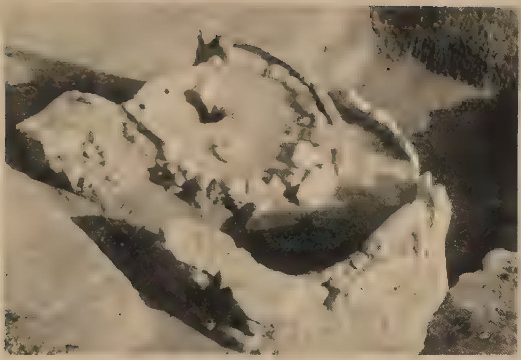
[1] Good examples, *Thermi*, 39, fig. 15.

[2] For the desirability of having hearth and oven side by side, see Tsoundas, *Δ.Σ.* 104–6; Hutchinson, *Thermi*, 55.

[3] There were three walls: the low one, conspicuous in the photograph by reason of its straightness and regularity, showed the joints of the slabs of mud from which it was made; two more walls were above it, side by side.

[4] Mr. Stewart is inclined to regard this complex as a primitive device for drainage. He compares the arrangement described by Waterman, *Tel Umar*, 9, 11, fig. 3, which is, of course, more elaborate and of Parthian date. Our burial would, on this theory, have been inserted at a later date.

[5] Arrangements are being made for the examination of the human remains by an expert as soon as possible.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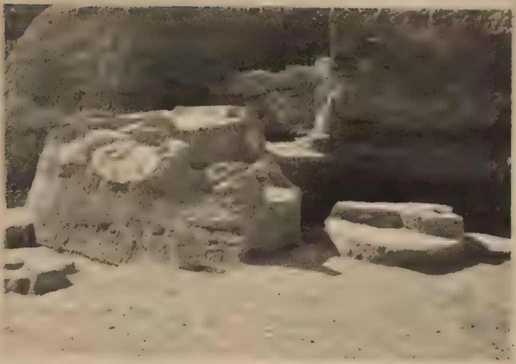
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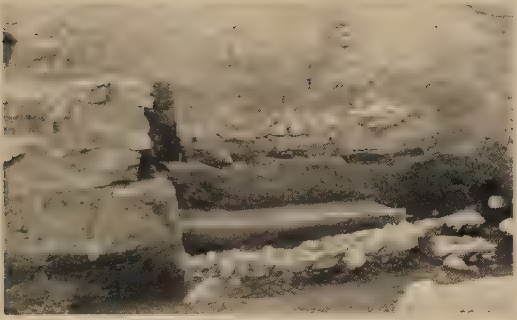
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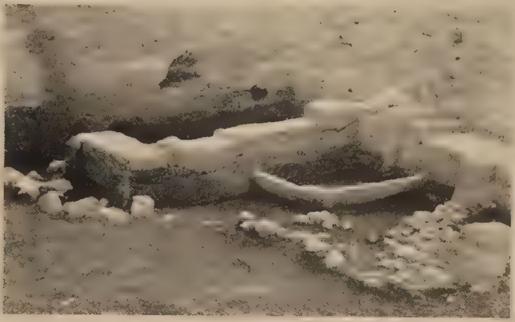
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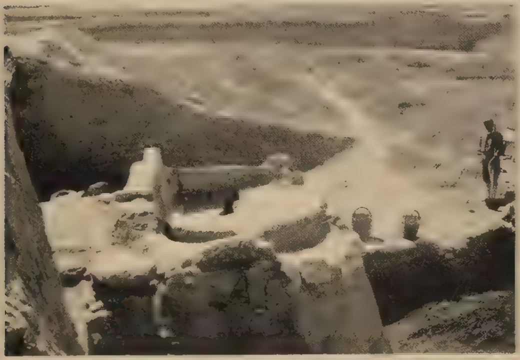
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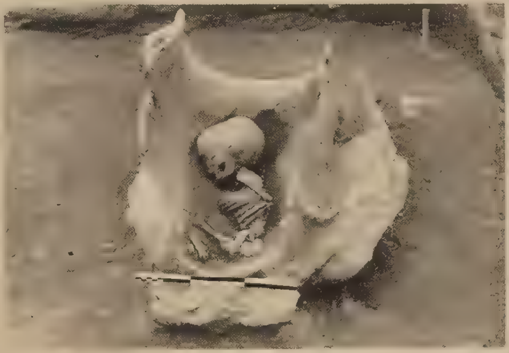
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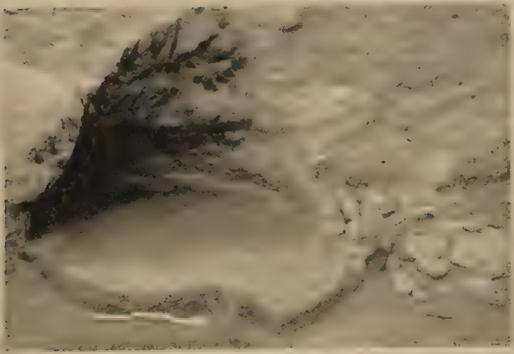
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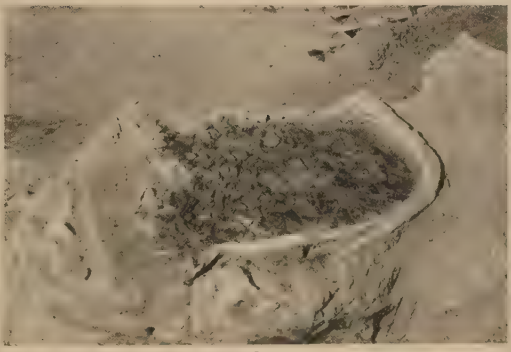
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1. Large oven, area II, showing stone foundations. 2. The same, with mud-brick circle at 90·56 m. on right. 3, 4. Walls, area V. 5. Large oven, area II, showing mud-brick superstructure. 6. Infant burial, area V. 7. Pithos oven, area V. 8. Smaller oven, area II

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The change was obvious first in the character of the soil and secondly in the pottery. A few sherds showed signs of having been turned on a slow wheel and might have formed part of red-cross bowls (p. 17) though we cannot be certain they did so. Large fragments of red-cross bowls were produced by three deposits of potsherds at 95 to 95·13 m. in the north end of the trench: some of these sherds were arranged with their unbroken sides uppermost, so that they appeared at first sight to be whole. The earth above the 95·13 m. level yielded a few sherds turned on the fast wheel, some hand-made sherds, and quantities of fragments too coarse to give any clue to the method of manufacture. This coarse ware marks the transition to period C at Kusura, just as at Thermi it preceded the introduction of good wheel-made vases.[1] Above a floor at 95·80 m. the products of the fast wheel increased rapidly, and above 96·30 m. hand-made sherds were so rare that we may consider period C to have begun. One discovery from the intermediate strata deserves record: between 95·75 and 95·45 m. many seeds[2] were found, either beneath stones or in small sealed channels in a patch of stamped clay.

To the same period, to judge from pottery and stratification, belongs a hoard of charred seeds from the pit called *area I*: all are lentils, *Lens esculenta*, from which the hard seed coat-has been removed. They were found in the side of the pit, in a clay-lined hollow that had been specially prepared for them, roughly quadrangular and measuring 0·30 × 0·30 m., its interior hardened by fire (pl. VIII, 3). From this, enough seeds were recovered to fill a large basket.

In the same pit the beginning of the transitional period, that of the slow wheel and the masses of coarse pottery, is defined by an extensive wall of mud brick burnt red: the wall is in places over a metre high and extends along the cliff-face beyond the pit. The largest of the bricks is 0·20 m. wide and at least 0·25 m. high and 0·35 m. long.

Period C (Areas I, III–VIII)

In *area I* are three parallel walls, their heights varying from 1·10 to 0·80 m., built of large stones. They may prove eventually to be a fortification, but we do not yet know if they are contemporary with the other architectural remains of this period.

Areas III, VI–VIII are covered by the remains of a town or large village (pl. IV). Most foundations are of stone, and courses of stone above the level of floors and door-sockets prove that the superstructures might be partly of stone too. The highest of the stone house-walls rises to 0·90 m. Mud brick was, however, used for the missing upper parts of most walls and a few mud brick walls rest directly on the earth. Sometimes stone walls have an inner facing of mud-brick or mud 0·20 m. or more wide, which descends lower than the stone foundations and is connected with a floor-level which is also lower. The inner surfaces of the walls are whitewashed: so too the beaten earth of some of the floors. Door-sockets are made from stones with a hollow in the centre for the door-post.

Taking into consideration the depth of the foundations, the levels of floors and door-sockets and the fact that some walls are bonded to those adjoining them, we have distinguished three architectural stages, but our conclusions are far from certain. Many of the earliest walls must have survived into the second stage and been incorporated in its buildings: again, stage two must have overlapped stage three. Moreover, the ground rises from west to east, so that low foundations on the west may be contemporary with higher foundations on the east. The absence of complete rooms and the impossibility of reconstructing house-plans complicates analysis still further.

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[1] *Thermi*, 70.

[2] These proved to be *Fumaria* (fumitory): see p. 12. I am indebted to Mrs. Reid for identifying these and all other seeds from the settlement.

Beginning at the east end of area VI, I will describe only those features in our town which deserve special comment. The room VI 1 has a mud-brick wall on the west, and the south-west wall is missing. In the centre was the erection which we named the shrine (pl. v, 4). A terracotta column, 0·47 m. high, with a curved projection at its back, stood on two platforms of sun-dried brick. I have called it a column because it originally rose to a greater height, as was shown by the presence of a large fragment which lay on the ground beside it; but it is really a larger version of the horn-shaped objects described on pp. 37, 39. Its front was covered with stamped circles: there were a few on its sides, and the edge of the higher platform was similarly decorated. Behind it was an oblong structure like an altar, made of mud bricks, all of which had been covered with whitewash before they were fitted together. Just in front of the column were the fragments of a large trefoil-mouthed jug, and a pile of seeds[1] covered with potsherds. Other broken vases lay beyond the platforms, including more trefoil-mouthed jugs, a spouted jar, and some bowls (pl. viii, 6, 7; fig. 9, nos. 2, 7; fig. 10, no. 9), together with the skull of an ox.

Here we have possibly the remains of some pillar-cult associated with dedications of seeds and pottery, perhaps also with the sacrifice of animals. The position of the room on the highest part of the mound would be appropriate to such a purpose. It may be mere coincidence that the pillar was oriented to face the rising sun in the middle of the summer.

The floor to the west, at 103·18 m., which is of beaten earth with the usual white dressing, could have been contemporary with the platform, since the latter is at a level of 103·37 m., the existing top of the column being at 103·84.

The terracotta structures marked in VII 1 and 2 are both later than the rooms in question: one of these terracottas is described on p. 37 and illustrated on pl. v, 7.

Room VII 3 is long and narrow like the west Anatolian type, but it is not, as we should expect, entered from the surviving narrow end. In the long walls are three doorways, one on the north-west, two on the south-east. The walls are thinly covered with mud and whitewashed. In the floor we cleared a shallow depression about 0·15 m. deep lined with yellow clay. Room VII 4 (pl. v, 5) contained a pit similarly lined but deeper (0·28 m.); the rim had a diameter of 0·45 m. but the pit itself swelled out below and then contracted towards the base. The so-called hearth in the centre may have been some kind of basin rather than a hearth, since no ash was found. It had a base of terracotta resting on a few large, flat sherds and a rim of sun-dried brick. Round it were traces of a floor, like the one at 103·18 m.

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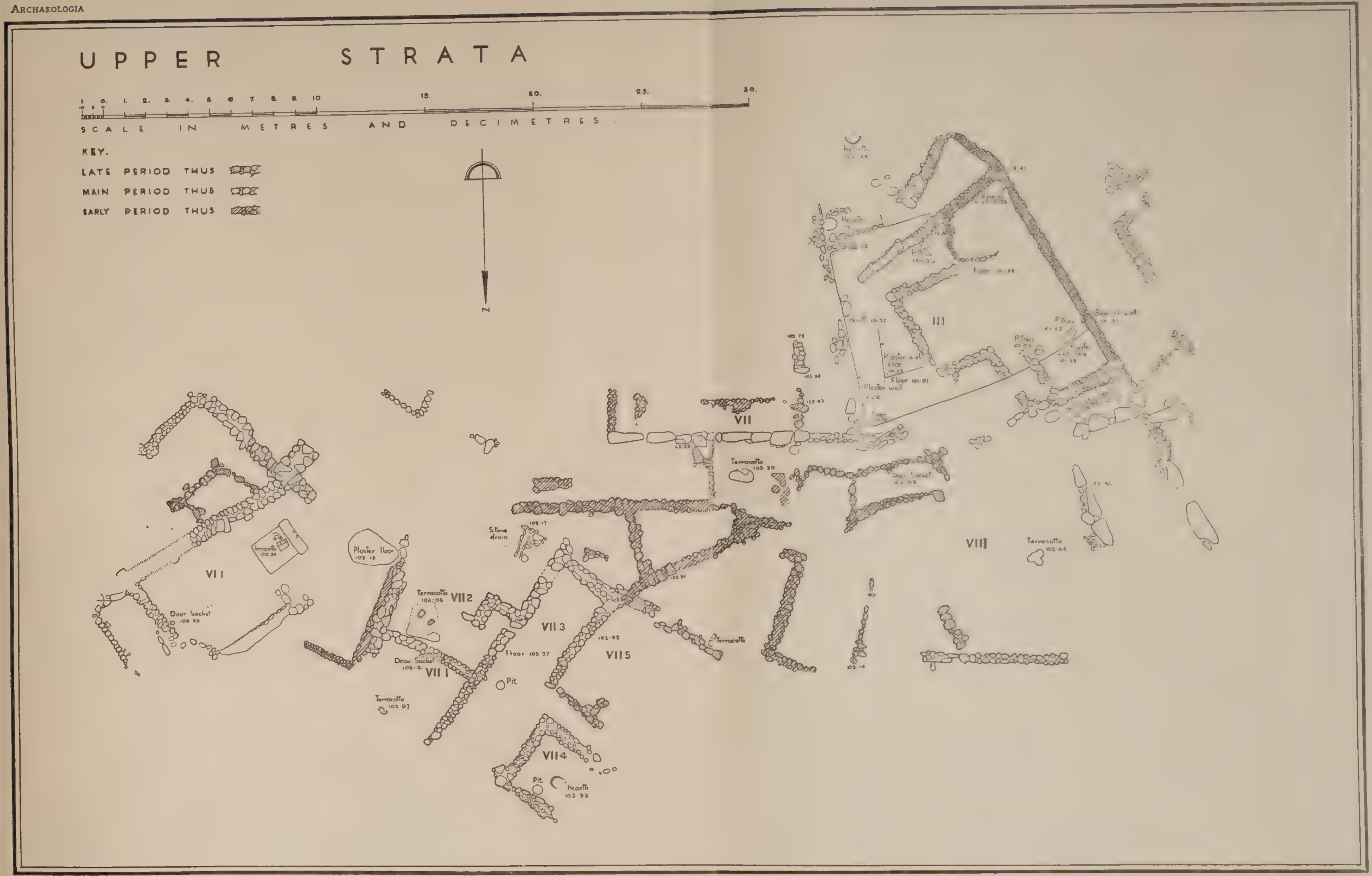
[1] Mrs. Reid, who has kindly examined the seeds, identifies them as *Fumaria* (fumitory) and heliotrope. These, especially the former, may have been cultivated on account of their medicinal properties.


UPPER STRATA
1 0. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10 15. 20. 25. 30.
SCALE IN METRES AND DECIMETRES.
KEY.
LATE PERIOD THUS
MAIN PERIOD THUS
EARLY PERIOD THUS
N
III
Floor 101·51
Plaster wall
Plaster wall face 101·33
Hearth 101·37
Pithos 101·02
Pithos 101·43
Base of wall
103 78
103 98
103 43
VII
Terracotta 103 20
Door Socket
VIII
Terracotta 102·44
103 16
VI 1
Terracotta 103 84
Door Socket 103 80
Plaster floor 103 18
Stone drain
103 17
Terracotta 104·08
VII 2
VII 3
Floor 103 27
102·92
VII 5
Terracotta
103 84
Door Socket 103·31
VII 1
Pit
Terracotta 103 97
VII 4
Pit
Hearth 102 92

Architectural remains, period C

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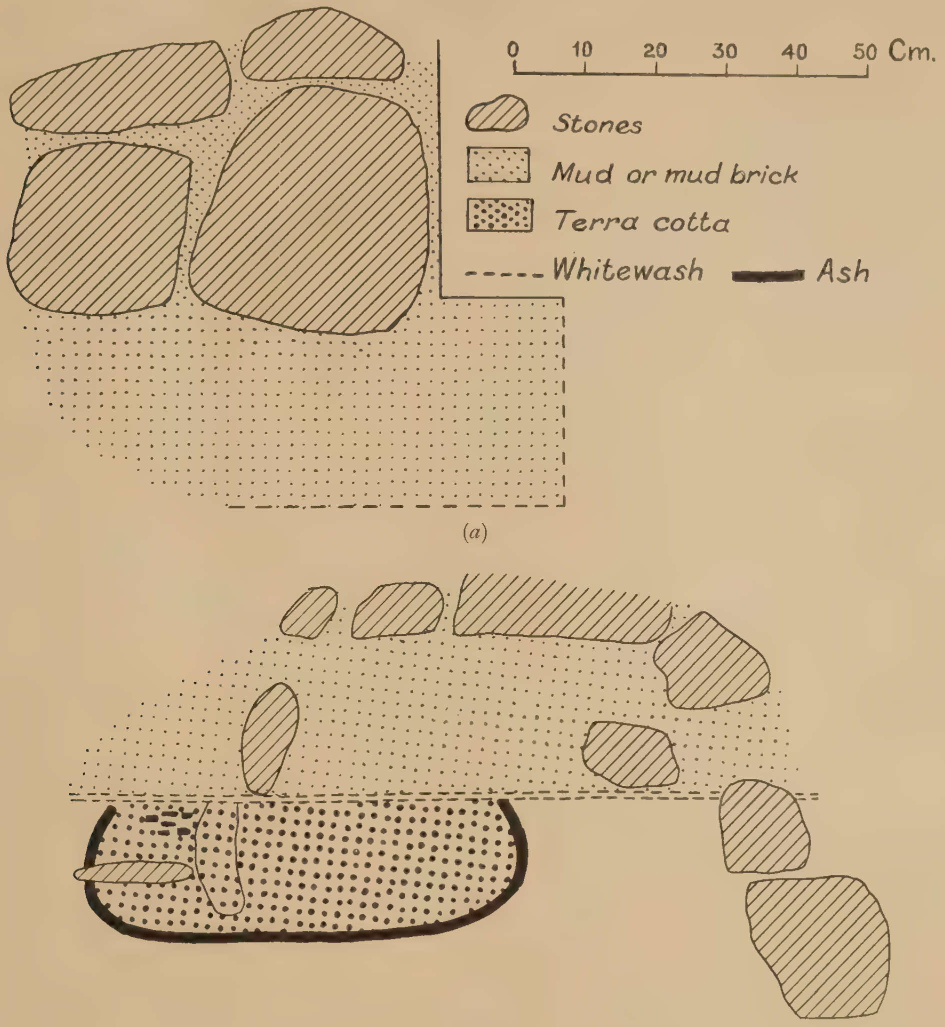
In the southern part of area VII is a wall made of huge blocks of stone extending downwards for over 0·80 m. (pl. v, 2), below which are courses of smaller stones probably earlier in date, resting on other large blocks. The whole wall is 1·10 m. high.



(a)

(b)

Fig. 4. (*a*) Section of wall, area III; (*b*) plan of hearth at 101·37 m.

In its final state it may have been connected with the enormous stones in the western part of area VIII.

Area III in its later stages was built over with small walls and produced the group of pithoi illustrated in pl. VIII, 2. Inside one of the rooms was another of the clay-lined pits, containing ash and a single potsherd.[1] In its earlier stages, most of this area formed a large court or hall (pl. v, 1), the shape of which is clearly indicated by whitewashed mud-brick walls, drawn in outline on the map. The mud-brick walls are backed on the east and apparently also on the north by somewhat ruinous stone walls, the foundations of which are higher than those of the mud bricks (fig. 4, *a* : cf. p. 11, above). The stone walls on the west and south-west, hatched on the plan, may have been constructed later, though we have treated them as if they also belonged to the earlier period. The base of the western wall is lower than the floor, but it is united with the south-western wall, which behaves in a disconcerting manner, rising so rapidly that its eastern end is well above the floor. Perhaps the western wall, up to which the north wall of mud-brick runs, was part of the original scheme.

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[1] Depth 0·15 m., diam. 0·35 m. The clay edges were 0·04–0·06 m. wide.

In the north-east corner another line of whitewash, also shown in outline on the plan,[1] can be traced inside the main line on the face of the mud-brick wall. The space between them, 1·8 to 1·3 m. wide, is hard and in parts covered with whitewash. This second line of plaster proved to belong to the face of a step, 0·17 m. high, but the only sign of a floor corresponding to it was in the north-east corner, whereas patches of a floor at the same level as the space between the two lines were observed in many parts of the court. Five jars (three illustrated in fig. 8, nos. 2, 4, 5), laid on their sides, were found below this higher floor, only one of which had really hard earth beneath it. Four of them were empty, but the fifth, that which lay in the north-west corner, contained a few bones while a single vertebra lay outside it. They may be human but we have not yet had them examined. Jars in this position suggest burials, and it is not impossible that the vessels in area III had originally been the resting-place of human bodies; but if so, why were the bodies removed? A skull, whether of man or woman we do not know, was found together with a few bones inside the semicircle of stones which can be seen on the plan near the south-west corner.

The hearths of this period are often platforms of baked earth without any substratum of potsherds. Sometimes they are backed against a wall, like the hearth in the court of area III at 101·37 m., described on p. 37 (fig. 4, *b*). If in the centre of a room, they seem to have been given a back and sides of mud-brick, but the examples are too fragmentary to deserve illustration here. The terracotta attachments which may be related to them are discussed in the section on terracottas. Curiously enough, several hearths, obviously later than any architectural remains on our plan, were found just below the surface.

Period A.

THE POTTERY

The character of the earliest wares from Kusura, all of which are hand-made, will be best appreciated if the forms are discussed before the fabrics. The forms are distinctive, though only three vases can be reconstructed completely. Pl. VI, 8, and fig. 6, no. 13, illustrate a large mug of very fine dark grey clay, slipped black, highly polished and ornamented with white paint. Its technique and decoration, combined with the evidence of similar fragments from the lower strata, enable us to assign to the same period a black polished jug, also painted in white, which was bought for the Afyon Museum before the excavations began (fig. 6, no. 12). Pl. VII, 2, is of coarse grey-buff ware, with a buff polished slip. The handle as restored is too thick, and most early handles are flat, not round.

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[1] In excavating, we found it practical to continue this line in searching for the lower floor and clearing the pithoi. In the photograph, therefore, one sees both the back or higher step, which is the genuine face of the mud-brick wall, and the front or lower step, which is artificial except in the corner.

The commonest vases, however, are flat bowls, always brown, or blackish-brown (fig. 5, no. 4), which become remarkably thick at the point where base and side meet: one can often discern two layers of clay at this point. A different type of bowl is represented by a fragment with 'ears' on the rim like *Thermi*, pl. XXXVI, 352,[1] but without any lug. There are many rims and handles belonging to jugs (fig. 5, no. 5) which seem to have the same profile as some of the pots from the tombs, while other rims and handles might come from cups. The everted rims of this period are in contrast to the turned-in rims which predominate in period B. Spouted jugs occur, also spurred or notched handles (fig. 5, no. 1), and flat dishes with straight, low sides. Pithos rims are turned outwards, with a flat top (fig. 5, no. 2).

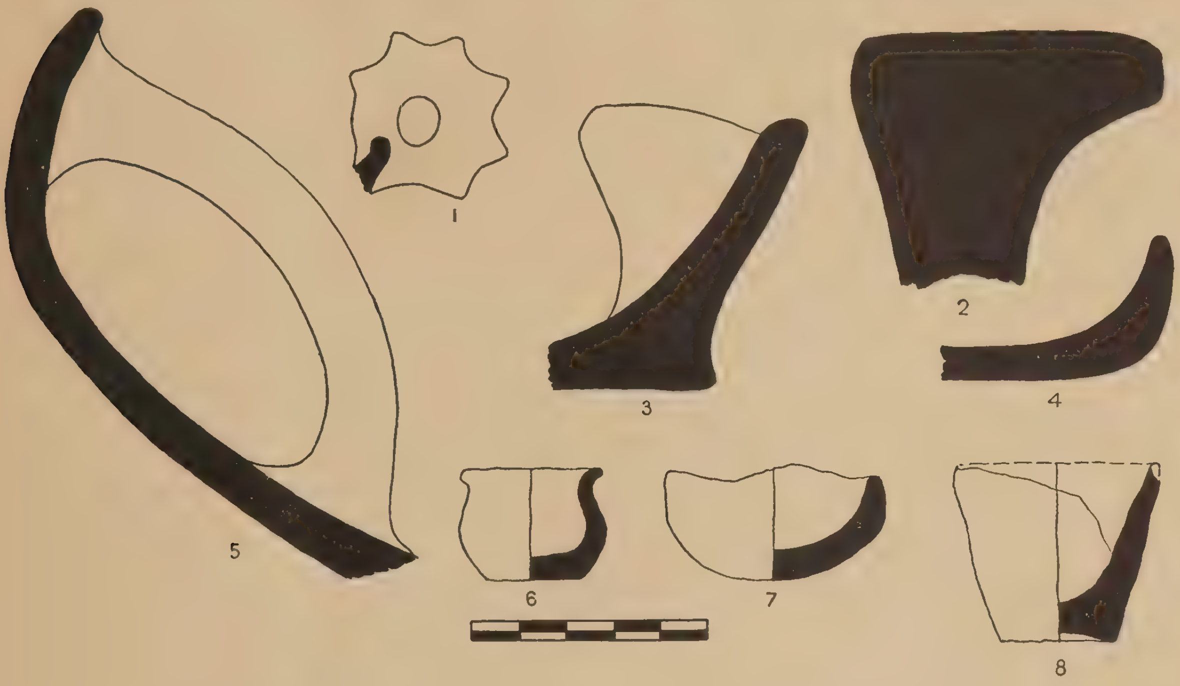

Fig. 5. Pottery: nos. 1, 2, 4, and 5, period A; no. 3, period B; nos. 6–8, period C

The clay is either grey-buff, varying to grey or black, sometimes black at the core, or red, which may also have a black core. The surface is either polished directly or covered with a slip, which may be red or brown, or brown-black. At its best, this slip is so fine and well burnished that it becomes excessively brilliant: the red, in spite of its brightness, is frequently mottled black; the brown is shaded in tone so that the insides of bowls are much darker or lighter than the outsides.

Decoration is uncommon, but may consist of white paint, or incisions, filled with white (pl. VI, 13*g*[2]); one fragment of a cup or jug, from an upper stratum of A, shows the plastic horizontal ridges characteristic of period B, but in a less developed form.

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[1] One other example belongs to the early stages of the B period.

[2] The fragment illustrated is from a stratum transitional between A and B, but is typical of the A wares.

It will be observed that the tomb vases (pl. x; see p. 63) stand closer in shape to no. 2 on pl. vii and no. 12 on fig. 6 than to any vases belonging to the later periods. Moreover, pl. vii, 2, is of the same coarse quality, and more or less the same colour as the examples on pl. x.

Any parallels which one may quote are insufficient to give definite evidence as to the origin of this early culture. The peculiar bowls of fig. 5, no. 4, suggest the type found at Ahlatlibel,[1] some of which are decorated and have an omphalos in the centre, while others are plain like ours. There, too, notched handles are plentiful, and the jars have everted rims. A fruit-stand from the chalcolithic period at Alişar[2] has horizontal ribs resembling those of the fragment mentioned above; one may also compare an Early Cycladic spouted jar, and certain Middle Helladic vases,[3] without throwing much light on the source of this form of ornament at Kusura.

Period B.

The transition from period A to period B is gradual: there is a stage when we find not only wares of the former side by side with those of the latter, but also sherds which display the characteristics of both. Soon, however, the most obvious features of A, in particular the saucer-like bowls with the dark-brown surface, disappear.

Fortunately we are rich in complete vases of the B period (a selection appears on pls. vi, vii, and figs. 6, 7). The wares, from the point of view of superficial effect, can be divided into red, grey-black, and coarse red or black, but the fabrics are actually more complicated. The clay may be red, grey, black, buff, or intermediate shades. The surface of the red clay may be plain, polished, or coated with what sometimes might be red paint, but is more often obviously a red slip. The shade of red varies from orange through madder to a brownish-red, and these variations in colour seem to be intentional, their attractive appearance being usually enhanced by a high polish. Grey clay may be covered with red slip; alternatively, it may be plain, polished, or given a slip which ranges from silver to black, and is more or less burnished. Black clay has always a black surface. Buff clay is not uncommon: it is often slipped red, alternatively brown-grey. There are also vases where the firing has produced grey-buff and greyish-red variants. The coarser wares may be red, grey, or black, but in most cases all three shades have been caused by inadequate firing.

Apart from the wide horizontal ribs of pl. vi, 2, 3, 5, 6, which are characteristic of the site, the commonest ornaments are grooves, plastic bars, and bosses. Space does not allow me to illustrate the extraordinary diversity which the plastic decoration displays: it is applied to rims, handles, and bodies; it may take the form of twists, or parallel lines, on bosses and lugs, as on pl. vi, 12; it may be combined with grooves, as on pl. vi, 1. Undoubtedly it is the most effective way of making a monochrome vase handsome, and the potters of Kusura exploited its possibilities with great ingenuity.

Incised patterns appear on a few sherds, pl. vi, 13 *a–f*; on the jar, pl. vii, 13; and on the tortoise, fig. 15, no. 5. The lines are less bold than in period A, and rarely show signs of white filling. Three sherds might be called painted, since a trickle or two of thick red paint has been encouraged to run over their buff or grey interiors: one of the sherds is covered with the same red paint outside.

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[1] For this site, see *Türk Tarih*, ii, 3 ff., especially 52–4; Bittel, *P.F.K.*, pl. vi, iv, 2, 60–1, 72–4.

[2] *Türk Tarih*, i, 38, fig. 17.

[3] Åberg, *Bronzezeitliche und früheisenzeitliche Chronologie*, iv, 54, figs. 94–6; 87, fig. 167.

In the middle strata of B is a buff ware, covered with red paint, except for a horizontal band, which is reserved and decorated with incised chevrons (pl. VI, 13 *a*).

All the B vases are hand-made except the red-cross bowls described below.

The shapes fall into well-defined groups:

(*a*) Saucers. Uncommon and usually coarse. Fig. 6, no. 7, greyish red, from a deposit in V at 95·09 m.

(*b*) Bowls and shallow cups. The profiles are illustrated, and need not be described. Some bowls have lugs, some handles, some are handleless. The lug may be horizontal or vertical, and pierced singly or doubly in either direction, though the vertical hole is the more frequent of the two (fig. 7, nos. 8, 9). Vertical ring-handles include single strap-handles, plain or vertically ribbed, single round handles, twisted or plain, and double twisted handles (fig. 7, no. 5). The peculiar folded twist of fig. 7, no. 10, was a popular device, but I do not yet know in which direction such handles lay. Horizontal handles (the attachments in a horizontal direction, but the handle itself more or less upright) have been recorded, and are usually twisted. Red bowls were preferred to grey ones. With regard to distribution, the horizontally ribbed types are only rare in the lower strata of B, and persist till the end of the period.

Examples:—Pl. VI, 1; fig. 7, no. 8: Grey-black clay, grey slip, well burnished outside, slightly burnished inside. Originally there were four lugs: three are preserved, two being unpierced, one pierced with two holes.[1] From V, 93·90 m. Pl. VI, 2: Red-buff clay, red polished slip. From V, 94·65 m. Pl. VI, 3: Buff clay, madder red slip, highly polished at both sides. Horizontal ribs. From V, 93·88 m. Pl. VI, 4: Fabric as last. Inside, below the missing handle-attachment, a grooved V-shaped ornament. From IX, 93·05–93 m. Pl. VI, 5: Buff clay, mottled brownish black slip, burnished. From V, 94·65 m. Pl. VI, 6: Red clay, red slip burnished both sides. Horizontally pierced lug. From V, 93·38 m. Pl. VI, 7; fig. 6, no. 11: Greyish red clay, burnished outside. Vertically pierced lug. From V, 93·49 m. Fig. 6, no. 2: Red-buff clay, orange-red slip. Slight burnish. From V, 93·93 m. Fig. 6, no. 4: Buff clay, yellowish red slip burnished both sides. Exact level uncertain. Fig 6, no. 5: Red clay, red slip. From V, 92·90–92·85 m. Fig. 6, no. 6: Pinkish buff clay, burnished. From V, 93·95 m. Fig. 6, no. 8: Red clay, red slip, slight polish. From V, 95·09 m. Fig. 6, no. 10: Grey clay, plain surface. From V, 95·09 m.

Fragments of red-cross bowls (fig. 6, no. 1) occur between 95 and 96 m. They are always made of buff clay and turned on a slow wheel, but the profile varies. Rims, however, are rare. Usually the outside is painted red and the inside reserved and decorated with a red cross, but the maker of the bowl fig. 6, no. 1 drew a cross not only inside (fig. 6, no. 1 a, b) but outside on the base as well (fig. 6, no. 1 c). The red-cross bowls of Troy V also show variations in profile and decoration.[2]

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[1] One lug in the photograph gives the impression of being pierced horizontally, but the cavity is superficial.

[2] For the types, see *SS.*, 82, 83. For the stratification, *A.J.A.* xxxviii, 233, xxxix, 562.

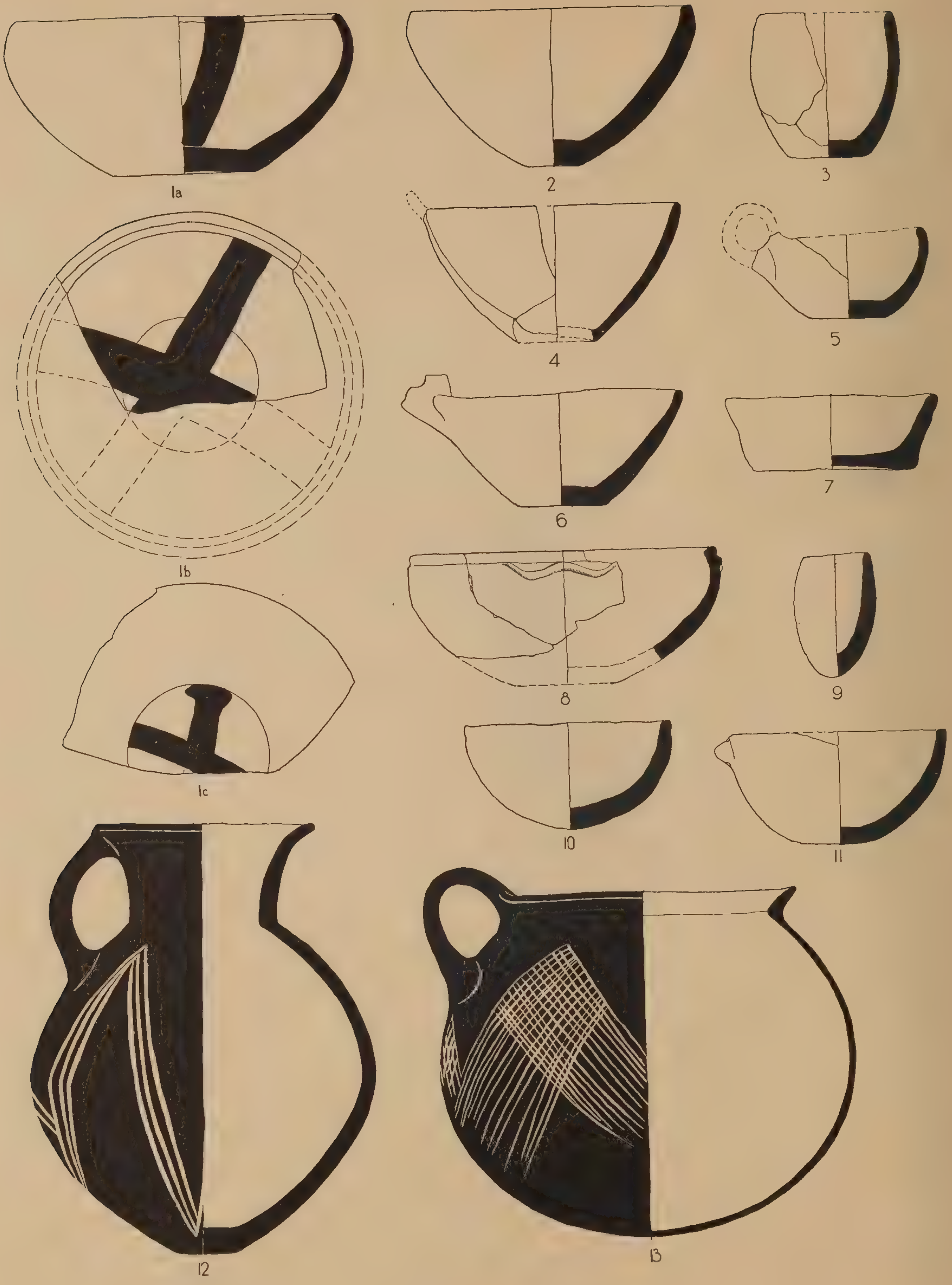
1a
2
3
4
5
1b
6
7
8
9
1c
10
11
12
13

Fig. 6. Pottery: nos. 12, 13, period A; nos. 1–11, period B; nos. 4, 8 ($\frac{1}{5}$); the rest ($\frac{2}{5}$)

(*c*) Deep cups. Only three could be reconstructed. Pl. vii, 12: Grey clay burnished outside. Twisted handle. Part of base restored. From IX, 93·05–93 m. Fig. 6, no. 3: A handleless cup? Red-grey clay. From V, 93 m. Fig. 7, no. 6: Buff clay, red slip, traces of polish. The base may have been conical. An import? From V, 95·09 m.

(*d*) Jugs. Squat jugs with wide mouth, lip rising in front, handle twisted or plain, are more often grey than red. They begin in the period transitional between B and A, are common below 94 m. and rare above.

Examples:—Pl. vii, 1: Silver-grey clay, burnished. Vertical grooves on body. From V, 93·80 m. Pl. vii, 3: Grey clay, grey-brown polished slip. From V, 94 m. Pl. vii, 5: Grey clay, grey slip mottled buff. Twisted handle. From IX, 93·05–93 m. Pl. vii, 6: Red clay, burnished red slip. Handle restored. From V, 93·80 m., in wall. Pl. vii, 7: Red clay, red slip. Twisted handle. From V, 93·40 m. Pl. vii, 9: Grey clay, burnished black slip. Three bosses. From V, 93·80 m., in wall. Fig. 7, no. 7: Clay and slip grey with buff patches. Burnished. From V, 93·5–93·25 m.

A coarser, higher type with the lip less clearly divided from the body survives for a longer period. Example, pl. vii, 4. Grey clay, dark-grey slip. From V, 93·25-93 m. Other jugs, evenly distributed but less popular, have a beaked spout.[1] The best-preserved is pl. vii, 11. Red burnished ware mottled grey. Three scars from the junctions of the handles on the shoulder, close together, two below, one above. Scarcely perceptible horizontal ribs on body. Lip chipped. From V, 92·80 m.

The jug pl. vii, 15 is curious, for the vertical part of the handle is hollow and forms a spout. Red-buff clay, red slip. Part of body and lip missing. From V, 93·5–93·25 m. Also unusual is the incomplete jug, fig. 7, no. 4. Silver-grey clay, burnished. Three pairs of knobs. From V, 93·20 m.

Coarse jugs of various kinds seem to have been in use throughout the period. Pl. vii, 8. Grey-buff clay, red-brown slip. From V, 94 m. Fig. 7, no. 1. Coarse red-grey clay. Surface badly burnished. From V, 93·86 m. Rare form, fig. 7, 3. This had, apparently, a round mouth, though part of the lip is restored. Coarse red-black clay. From V, 93–92·80 m.

(*e*) Collar-necked jars. Three complete vases and a few fragments. Pl. vii, 10: Fine red clay, burnished red slip. Three bosses. From V, 93·8 m. Pl vii, 13: Grey clay fired buff in parts. Incision. One lug restored. From IX, 93·10 m. Pl. vii, 14: Grey clay, dark red slip. From V, 93·20–93 m.

(*f*) Jars, various. The term 'jars' is here used for vases narrowing towards the mouth. There are no complete ones to show us the exact shapes. Fragments testify to the presence of fairly large jars with or without lugs or handles. The handles may be of the horizontal type described on p. 17 above, or vertical, unless the latter prove to have come from amphorae.

(*g*) A most attractive vase shaped like a tortoise is represented by the fragment, fig. 15, no. 5. Grey clay with highly polished surface: incised decoration filled with white. Length, 0·076 m., ht. 0·036 m. From V, 96·16 m. The stratum is late and the 'tortoise' must be a survival.

(*h*) Cooking-pots. Tripod cooking-pots have either lugs or vertical handles below

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[1] A very sharp beak like that of *SS.*, no. 619, appears once only.

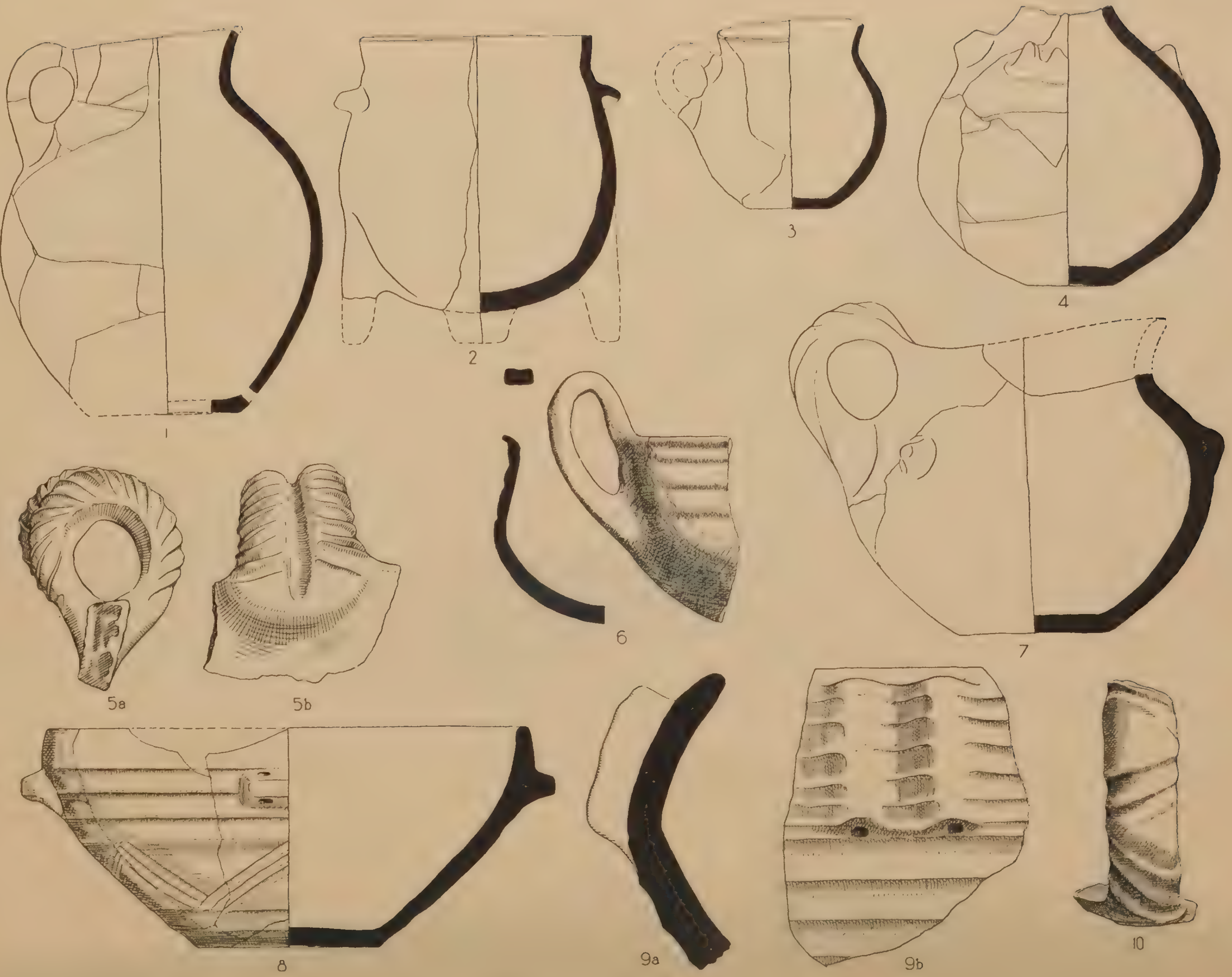
1
2
3
4
5a
5b
6
7
8
9a
9b
10

Fig. 7. Pottery, period B; nos. 1–3 ($\frac{1}{5}$); nos. 4–10 ($\frac{2}{5}$)

the rim. The best is fig. 7, no. 2. Coarse blackish-red clay, smoke-stained. From V, 95·09 m. We have also a legless cooking-pot with a lug on each shoulder.

(*i*) Miniature vases are not common. Fig. 6, no. 9 is the largest, of coarse red clay, from V, 92·5 m.: the others are half its size, all coarse and badly fired. There is one saucer, a shallower version of fig. 5, no. 7.

(*j*) Pithoi and other large vessels. Two more or less whole pithoi appear in fig. 8, no. 1 being that which contained the infant burial (p. 10), no. 3 the structure described on p. 10. Among the fragments, the commonest are turned-out rims with flat tops, as in period A. Body and rim are often covered with an admirable lustrous red slip, and both may be decorated, the rim with impressed lines arranged diagonally in groups, the body like pl. vi, 12, 14, or more simply.

Very large dishes with flat bases and low rims occur in coarse blackish ware, sometimes with a vertical projection inside (fig. 5, no. 3); also deep, heavy bowls with flat bases, straight sides, and similar projections on the interior—whether there was more than one in each bowl we cannot say—running from the base to just below the rim.

Imported wares. Fig. 7, no. 6 has been noted as possibly an import, but the evidence is slender. If the base was originally conical, the vase, coming as it does from a late deposit in B, might be late enough to belong to the group of conical cups from Kültepe and other sites. A more obvious import is represented by the fragments of a very fine buff jug, too friable to be mended, and unparalleled on the site.

Parallels. There is a striking resemblance between our pottery and that found by Professor Ormerod in south-western Asia Minor, particularly that from Senirce and Punarbaşi Göl which are not far away.[1] Many of his jugs are of the squat, wide type with plastic decoration like our pl. vii; the form is known at Troy but is there undecorated.[2] His material also includes a bowl with a ring handle, like our fig. 6, no. 6.[3]

That good parallels should exist at Ahlatlibel is, however, something of a surprise. This intriguing site in the Ankara district, excavated by Dr. Reşid Galip and Dr. Hamit Koşay, has been recognized as having elements of the western and central cultures side by side[4] and has been already mentioned on p. 16 in connexion with our period A. In period B, its relationship with Kusura is more marked. The Ahlatlibel jugs have squat bodies like those of the Kusura–Senirce class, but their necks are longer, and the impressed decoration on some of them is more original because curvilinear. Spouted jugs are remarkably common.

The pottery of period B at Kusura shares many features with vases from the true western sites: the monochrome red and grey ware, slipped or burnished on the surface; the methods of decorating that surface, sometimes by means of incised lines, sometimes plastically; more significant still, a number of forms that are not imposed by the technique. The bowl Kusura pl. vi, 3 has the same outline as *Thermi*, pl. xi, 322, 4; with our jug pl. vii, 11, compare *Thermi*, pl. x, 560, 571, *B.M.Cat.* i, 1, pl. 1 A5, and other examples from Yortan which, though less close, help to prove that this was a fundamental form in western Anatolia.[5] The general shape of pl. vii, 15 is like that of *Thermi*, pl. xii, 288, though the handle differs. Our pl. vii, 8 is an undistinguished little jug which has many counterparts. Collar-necked jars are well represented at Troy, Yortan, and Thermi,[1] but each of these sites has its own type and variants, from which one may select *SS.*, nos. 417, 436, and *Thermi*, pl. xiii, 559, as being adequate parallels.

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[1] *B.S.A.* xviii, 80 ff., pls. v–vii.

[2] e.g. *SS*, no. 722.

[3] *B.S.A.* xviii, pl. vii, 4.

[4] *P.F.K.*, 73.

[5] The handles of the jug on pl. vii, 11, are, of course, different from those of the other vases.

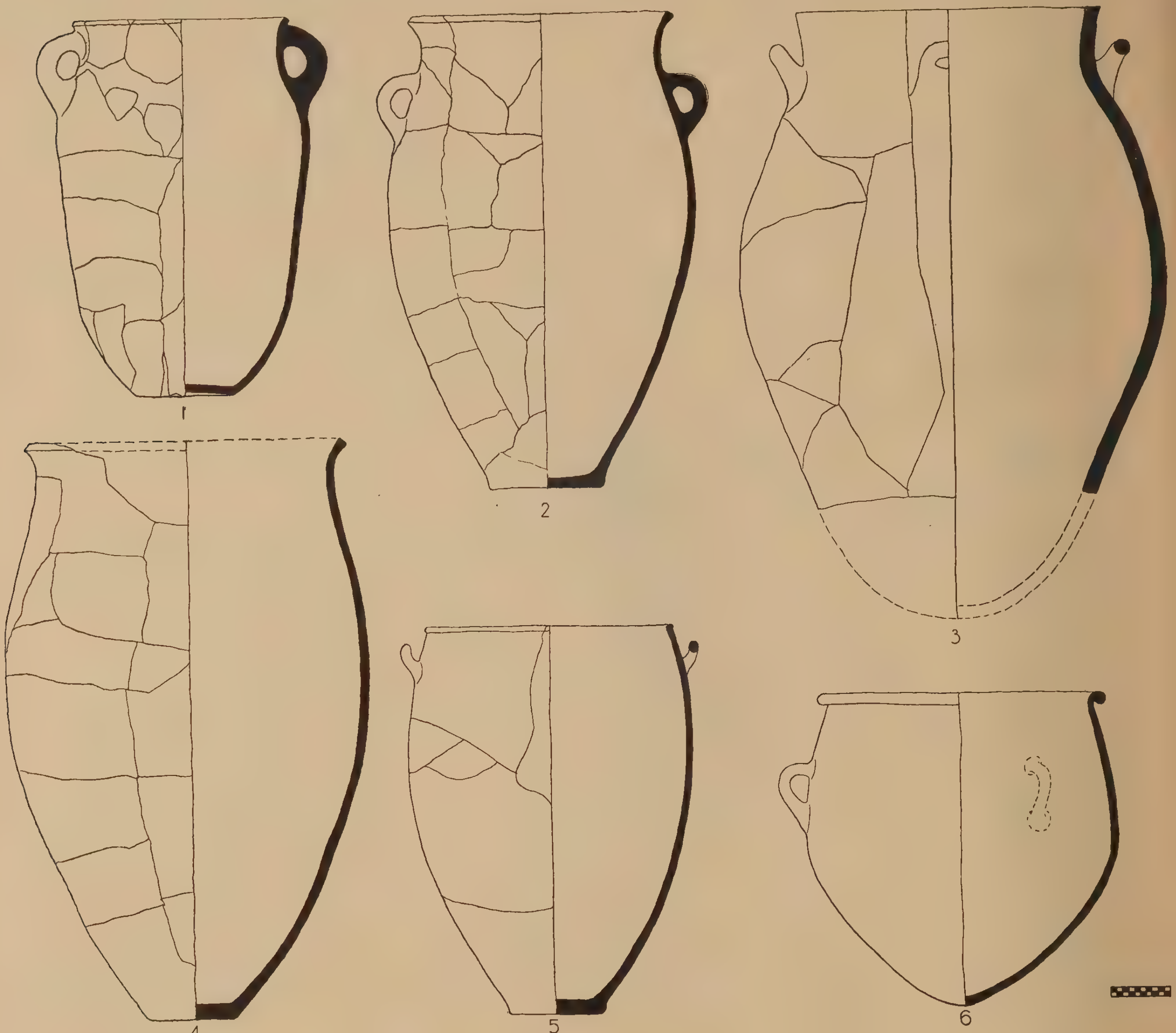

Fig. 8. Pithoi: nos. 1, 3, period B; nos. 2, 4–6, period C

Coarse vessels like cooking-pots are less useful as comparative material: notice, however, that neither the tripod cooking-pots of Thermi nor those of Troy have lugs or handles in pairs.

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[1] See Frankfort, *Studies*, ii, 58, note 2, for references; add *Thermi*, 79.

It is, indeed, from features like lugs and handles that the most important inferences can be drawn, but one must beware of assuming that the same stages of evolution occurred at sites which were remote from each other. For instance, the horned tubular lug of Troy and of *Thermi*, pl. XXXI, 3, is found at Kusura, but it is never set as high on the rim as it was in the earlier periods of Thermi. That the horizontally pierced and unpierced lugs of Kusura are more elegantly decorated than those of any other site is in accordance with the ornate tendency of local fashions: likewise the motive of the vertical bars, simply applied at Thermi (*Thermi*, pl. XXXI, 4), was at Kusura elaborated by an occasional twist to this side or that, or superimposed on horizontal ridges. It is remarkable that, on bowls, vertical lugs were preferred at Kusura, horizontal ones in the west.

In spite, however, of the family likeness between the Kusura pottery and that of the western group as a whole, in spite of the shapes and decorative motives which were common to both, the isolation of our site is emphasized by the absence of many variations and of certain fundamental types of vase which were part of the western potter's repertory: the overlapping lid, the askos, the tumbler, the jug with cut-away neck. The pyxis is missing, too, but even in the west it is only present at certain sites[1] which might have been influenced by the Cyclades. On the whole, it seems as if the potters of Kusura contented themselves with a limited number of forms but vied with each other in devising new and ingenious motives with which to decorate their handiwork.

Period C.

The pottery from the upper strata differs from that of periods B and A in fabric, in decoration, and in most of the forms. The fast wheel is now in use, but the new technique alone would not have produced so complete a revolution. It is obvious that fresh influences are at work, and, since a number of shapes can be paralleled in central Anatolia, we must assume that contact with this area was now well established, a view that is supported by examination of the smaller antiquities from the settlement. Nevertheless, the majority of the shapes represented at Kusura do not occur either at Alişar or at Bogazköy, nor are the fabrics identical, though they have points in common. Even more striking is the non-appear anceat Kusura of certain fundamental types of vase found on the two Hittite sites: the jugs and cups with conical bases, for instance, and bottles like *Bogazköy*, pl. 8, nos. 1, 2.

There are distinct resemblances between the Kusura C wares and those of the late bronze age from Thermi and Troy, a sign that relations with the west were still maintained.

It remains for us to consider what features link the wares of period C with those of period B. Undoubtedly the bowls turned on a slow wheel, which came into use during the later part of period B, have often the same rims as bowls turned on a fast wheel from period C, indeed there are many specimens which might belong to either class. The coarse collar-necked jar with lugs, fig. 10, no. 6, from the top stratum, has evidently been evolved from jars like pl. VII, 10, 13, and 14; and other, coarser pots show very little change.

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[1] *Thermi*, 86.

I feel convinced that descendants of the original inhabitants still formed part of the population; alien elements may have been incorporated therein, but it is not easy to say whence they came. The only certain inference which we can draw is that, while easier methods of communication brought new fashions to Kusura, it retained that independence which had marked its art from the beginning.

The absence of Phrygian painted pottery and of Phrygian bucchero in an area which became ultimately part of Phrygia indicates that the site did not survive long into the first millennium. But the two trough-spouts fig. 10, nos. 4, 5, typically Phrygian in form, suggest the presence of models somewhere in the neighbourhood before our settlement came to an end. The trefoil-mouthed jug, though it is part of the Phrygian potter's stock in trade, may have reached our site at an earlier date from the west, or have been inspired by models such as *A.H.* i, pl. XII, b 1081, 2703, discussed on p. 112.

The C wares are made of buff, red, or grey clay, any of which may be faced red or buff or brown, the colour of the surface being the result of polish, wash, paint, or slip. In the case of the buff-faced and red-faced vases, it is not always easy to tell whether a paint or slip was applied. The brown-faced wares are obviously covered with a paint or glaze-paint which occasionally has a metallic sheen like that of Attic geometric vases: compare, however, the silvery, micaceous brown of Alişar II.[1] The grey clay may be left plain or inadequately polished: coarse black vases also exist, but they are rare.

Red, buff, and brown-faced vases are often 'burnish-decorated', with small areas left matt in order to produce stripes or rays. Other forms of ornament are few. Horizontal ridges are sometimes marked with rows of notches (pl. VI, 15), and similar notches occur on lunate lugs[2] belonging to some kind of jar. Rows of horizontal grooves are found on several of the larger vases; plastic rings on the feet of stemmed goblets (see below); button-like knobs on the spouts of jugs (pl. VIII, 10) and, once only, on the edge of a bowl.

Shapes. The commonest are bowls, stemmed goblets, jugs, and jars, but there are many others. In describing the illustrated examples, I have only recorded the find-spot if it is in the lower strata of period C or in any way exceptional. All other illustrated vases come from the upper strata, in other words, areas III, VI–VIII.

(*a*) Stemmed goblets. Usually the rim is missing. The stem may be plain or have rings at either end (fig. 10, nos. 3, 10). Sometimes it is trefoil in section; again, it may be solid at the top with its lower half split into three sections (fig. 10, no. 2), either fairly thick or quite thin. Pl. VIII, 9, is plainer and coarser than the majority of goblets, being grey and covered with a slightly burnished brownish-grey paint: it gives the impression of having been turned on a slow wheel. Most goblets are buff, red, or brown, and some fragmentary ones have burnished decoration.

(*b*) Shallow bowls ('phialai'). These are red or buff, and always exceedingly thin at the rim. Three or four were found in the 'shrine' including fig. 9, no. 2, which is a little coarser and deeper than usual: it is made of plain red clay.

(*c*) Bowls, handleless. Those illustrated may be described as follows:—Pl. VIII, 4: buff clay, buff slip burnished inside and with burnished rays outside. Fig. 9, no. 1: red clay, burnished red paint. Fig. 9, no. 3: red clay, red paint, slight burnish. Fig. 9, no. 4: red clay, red wash faintly burnished in horizontal bands outside. From the top stratum in area V. Fig. 9, no. 5: as no. 1. Fig. 9, no. 6: unpolished buff-grey clay. Fig. 9, nos. 7; 8: red clay, red paint. No. 7 is from the 'shrine'.

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[1] *A.H.* i, 109.

[2] Not the horse-shoe lug, but one with a shallower curve.

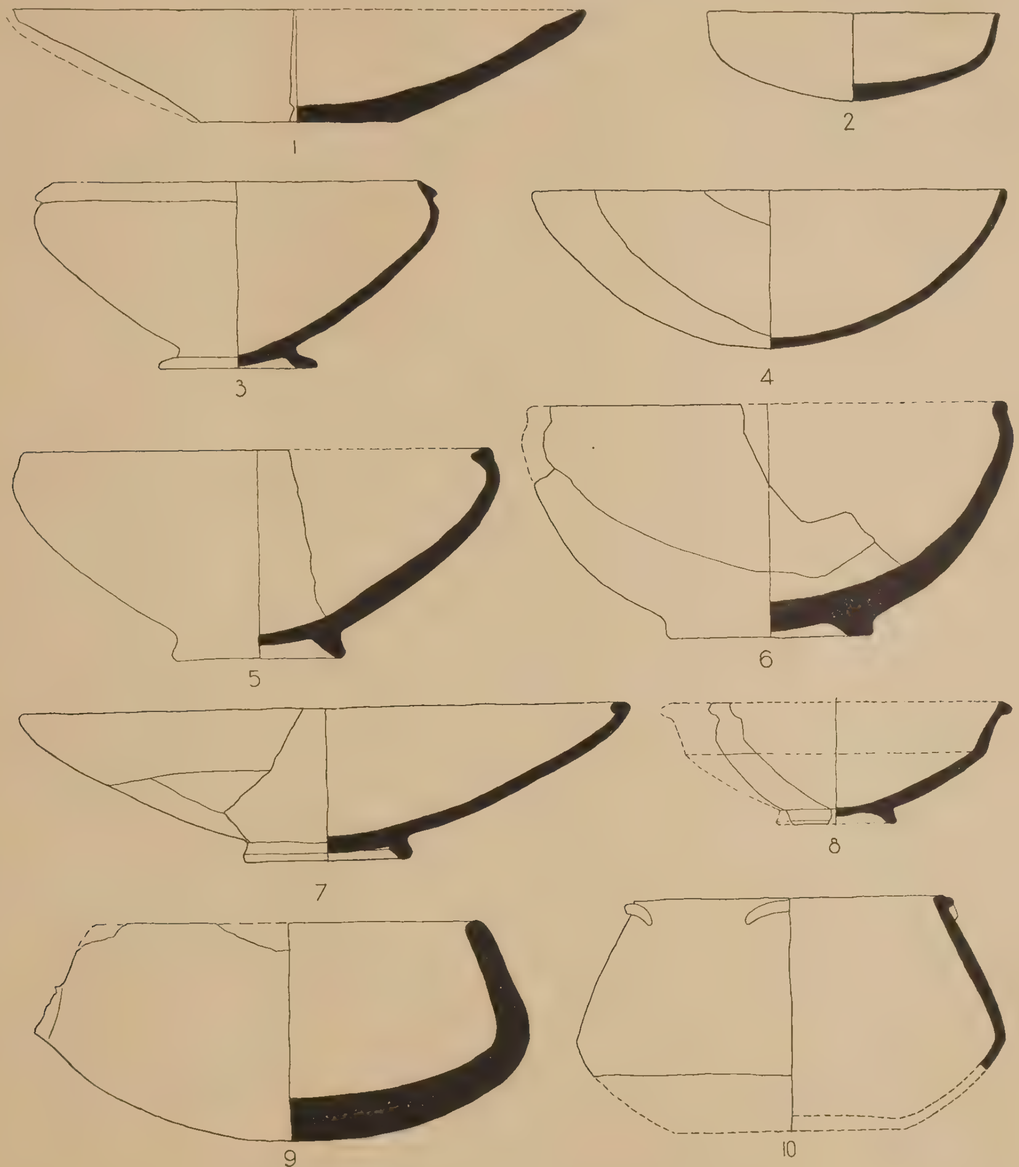

Fig. 9. Bowls, period C; nos. 3, 8, 10 ($\frac{1}{3}$); the rest ($\frac{2}{3}$)

Bowls with handles are scarce. Fig. 9, no. 9, is apparently hand-made, of coarse red clay; the handle, a vertical one joining lip and shoulder, has been broken off. This primitive technique is, of course, exceptional. Other bowls, represented by rare fragments, have a handle set upright with horizontal attachments on the rim. Carinated fragments with vertical handles on the shoulder may come from bowls or jars.

The bowl fig. 9, no. 10 with three plastic bars, originally four, on the rim may have been deeper than the reconstructed drawing. It is of rather coarse greyish buff clay. This bowl is late, but the type, though never common, goes back to the period transitional between B and C.

(*d*) Deep bowls and vessels of the krater class with incurving rim. To judge from the fragments, many of these were not unlike the pithoi, pl. VIII, 2. Vertical and horizontal handles and horizontal lunate lugs are recorded.

(*e*) Amphoroid jars. Fig. 10, no. 12. Greyish red. The handles have a depression (for this see *Thermi*, pl. XLV, 1) at the base. A wider-necked type of amphoroid jar is found among the pithoi.

(*f*) Narrow-necked jars. Fig. 10, no. 9. Fine grey clay, fine red slip. From the 'shrine'.

(*g*) Collar-necked jar. Unique. Fig. 10, no. 6. Coarse greyish red ware.

(*h*) 'Face-urn'? Possibly to such a vase belongs the fragment fig. 15, no. 6, of yellow polished clay with the eyes applied separately.

(*i*) Mugs. Only two survive. Pl. VIII, 5. A unique form with heart-shaped lip, of polished buff clay. Fig. 10, no. 1. Buff ware, surface originally red.

(*j*) Jugs. The trefoil-mouthed type is the commonest. One such jug was found actually in front of the column in the 'shrine': beside the platforms were fragments of others including pl. VIII, 6. Red clay, bright red slip burnished horizontally on body, vertically near the base. Lip restored.

Beaked jugs. No. 10 on pl. VIII has a truncated beak, and bosses at the junction of lip and handle. Reddish grey clay, brown paint. Sharp beaks also occur: some of them have a beard-like projection below the spout (fig. 15, nos. 8, 9) which will be discussed below. A narrow-necked jug with round mouth is represented by one fragment.

(*k*) Spouted vessels. Besides pieces of wide and narrow spouts, we found one almost complete spouted vase, pl. VIII, 7, which was in the 'shrine'; the spout itself has been chipped off. Red-buff clay, red slip burnished with rays above the foot.

(*l*) Stands for pots like pl. VIII, 8, which is of pinkish grey clay.

(*m*) Long tube-like vessel. Fig. 10, no. 7. Buff clay, streaky buff wash burnished. Rim chipped: two suspension-holes. This is hand-made and was purchased in the village. We assumed that it was early till the fragment of a similar vase appeared in the higher strata.

(*n*) Cooking-pots. The tripod form is so far only known in the lower deposits of period C. A good example, of coarse reddish black clay covered with a carbonaceous deposit, is reproduced in fig. 10, no. 11. A type with horizontal lugs can be inferred from rims present in the upper strata.

(*o*) Lids. One overlapping lid, of coarse red-grey clay, the handle missing, the rims chipped, from the lower strata (fig. 10, no. 8). One stopper-lid, of good reddish buff clay, with two string-holes at one end, unstratified, is included here for convenience (fig. 15, no. 7).

(*p*) Miniature vases. Fig. 5, nos. 6 and 8 are of coarse greyish red ware, no. 7 is black.

(*q*) Pithoi. Fig. 8, nos. 2, 4, 5, from the square court in area III, are coarse, the clay

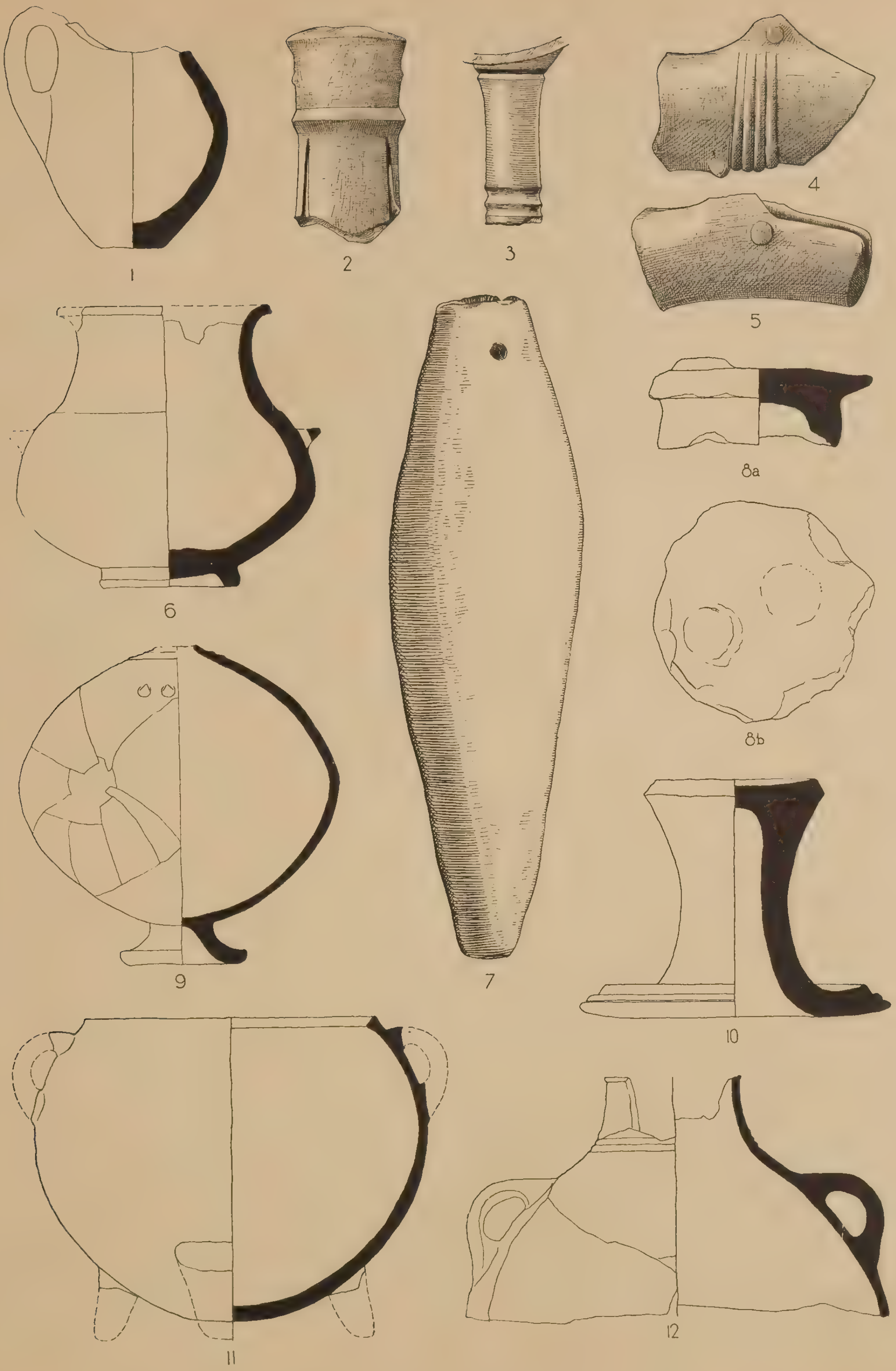
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Fig. 10. Pottery, period C; nos. 9, 11, 12 ($\frac{1}{5}$); the rest ($\frac{2}{5}$)

varying from red to black. No. 6 is one of the group illustrated in pl. VIII, 2, all of finer workmanship, of red or reddish buff clay.

The relations between Kusura and the Hittite sites on the one hand, the western sites on the other, have already been discussed: it remains for us to summarize the references. For some parallels we must go farther afield.

Stemmed goblets appear at Troy (e.g. *A.J.A.* xxxix, 29, fig. 23), but their stems are lower and have not the same variety as ours. The form is, of course, not unknown in other countries at an earlier period (Nirou Khani, Crete, *P. of M.* i, fig. 19: Nineveh, *Liverpool Annals*, vi, 87–9, pl. XIX *a*). To explain its appearance at our own isolated site, however, and to account for the rings[1] and triple pedestals which modify the stem is as yet impossible.

The rims of some Kusura bowls, deep bowls, and jars (the latter unillustrated) resemble those in *Thermi*, 139, fig. 40. For upright handles on the rim, cf. *SS.*, no. 3137, *Thermi*, 142, pl. XVIII, 607. The trefoil-mouthed jug, which does not become popular in central Anatolia till the Phrygian period (e.g. *Bogazköy*, pl. 14, no. 2; *A.H.* i, 253, figs. 230, 231), exists with a pointed base in Alişar II (p. 24, above), is well represented in the bronze age at Thermi (*Thermi*, fig. 41. no. 1), less well at Troy (*SS.*, no. 3007).

On the other hand, the bearded spout of fig. 15, nos. 8, 9, is typically Hittite (*A.H.* i, pl. XIII; de Grenouillac, *Céramique Cappadocienne* i, pl. 16, no. 9806). For button-like knobs on the mouths of jugs, cf. *Thermi*, fig. 41, no. 2, *SS.*, no. 3554. The spouted jug (pl. VIII, 7) is more eastern than western in conception though I can find no exact counterpart. Pot-stands like pl. VIII, 8 are definitely Hittite: cf. *Bogazköy*, pl. 6, no. 8, and *A.J.A.* xxxix, 545, fig. 58, from Tarsus.

If the fragment fig. 15, no. 6 is a face-urn, it gives us a useful link with Troy, presumably at the period of Troy IV.[2]

TERRACOTTA

i. *Figures, Human and Animal.*

The rarity of idols at Kusura is surprising. We possess three of terracotta besides the three stone ones described on p. 50.

Fig. 11, no. 1, was purchased from a peasant in the village and found, presumably, in the earth dug for making mud-brick. The height of the figure is 0·057 m. and the material is unpolished red clay with a grey core: the body and the tips of the arms have been broken off. Fig. 11, no. 2, period B, early, belongs to the same class. Ht. 0·049 m., material, dull grey clay. Both examples are distinguished by punctured features, incised lines on the body and neck, crossed bands on the chest, while in no. 2 some details are indicated by stippling. Parallels can be found farther east, at Ahlatlibel,[3] where they are particularly close, and at Alişar in stratum I, where several punctured and stippled idols are not unlike ours.[4] In the west and south-west, we have statuettes from Troy,[1] Thermi,[2] Antalya,[3] and elsewhere, which belong to the same family but are less nearly related. Those from Ahlatlibel and Thermi suggest that the stump-like arms of our no. 2 and the longer arms of our no. 1 are not the product of different traditions but due to the caprice of the craftsman.

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[1] For these, compare the stems of braziers from Kish: Mackay, *Report on the Excavations of the A Cemetery at Kish*, i, pls. I, XI, XII; ii, XLIX, L. The resemblance, though accidental, emphasizes the fact that ringed stems may be quite early.

[2] *Thermi*, 91, note 1.

[3] *Türk Tarih*, ii, 82–4.

[4] *A.H.* i, 54, fig. 62, b 2182, 103, 751.

Fig. 11, no. 4, of red clay, comes from the surface earth in area V, which, though it produced mainly pottery of our latest period, cannot be regarded as an uncontaminated stratum. If no. 4 belongs also to the latest period, it must be attributed to the second millennium, but this is improbable, since it has an excellent counterpart in the well-known bronze figure, *SS.*, no. 6054, from treasure K in Troy II, which must be earlier than 2200 B.C.[4] Characteristic of both are the folded arms, the long body, the short legs, and the projections at each side of the head: in the Trojan figure, however, these projections are apparently ears, and in ours they look like hair.

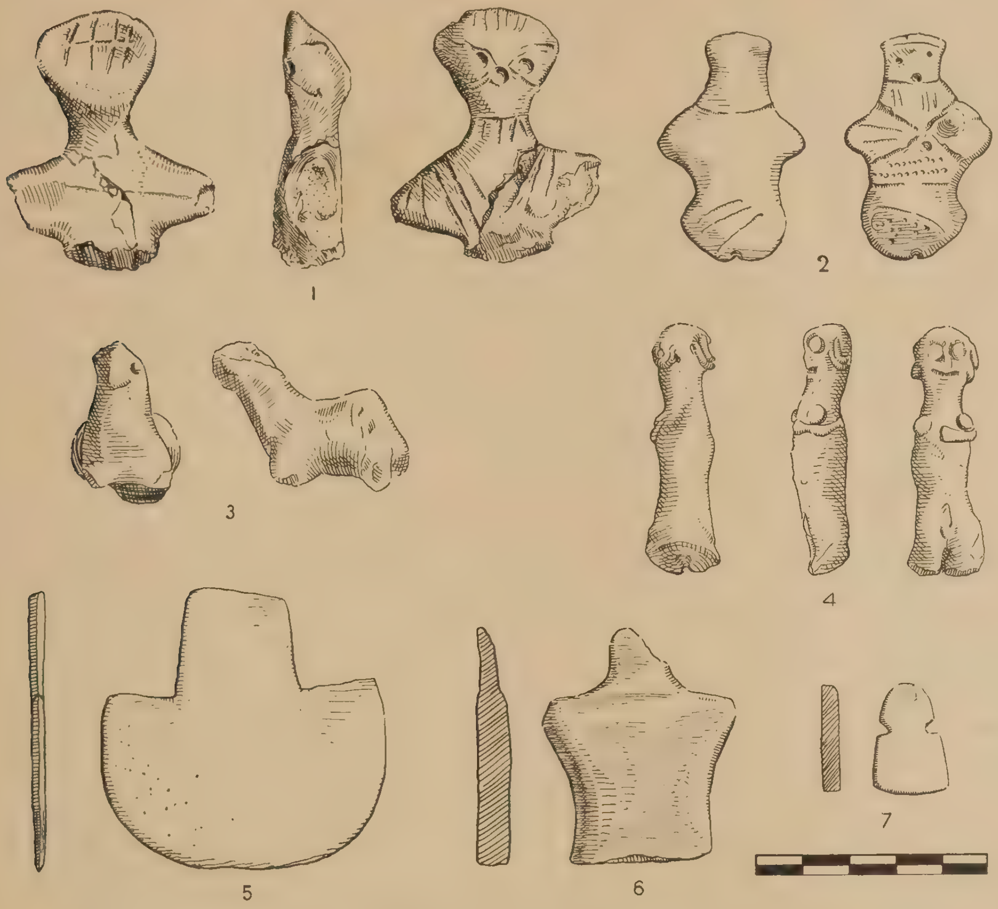

Fig. 11. Figurines: nos. 1-4, terracotta; nos. 5-7, stone

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[1] Schliemann, *Troja*, 141, fig. 70; *Bericht*, 1890, pl. 1, fig. 2.

[2] *Thermi*, pl. xx, especially nos. 29. 9 and 29. 1.

[3] *Liverpool Annals*, ii, pl. XXVI, XXVII, 145 ff.

[4] *P.F.K.* 14, 15, 17.

All examples in fig. 11 are female, as we should expect from analogies with other sites.

Fig. 11, no. 3, is an animal, cow or sheep, in coarse, reddish grey ware, from the lowest stratum of period B. Animals, small and carelessly made like these, occur in central Anatolia[1] and farther east: there are two specimens from Kinik near Afyon, now in the Afyon Museum.

ii. *Seals.*

Fig. 12, no. 19, pl. VI, 9*a*, is of grey clay with the handle pierced horizontally. It comes from area V at 93·50 m., i.e. period B: compare the bone seal from the same stratum, fig. 12, no. 20. Fig. 12, no. 17, of greyish buff clay, was found early in 1935 on the side of the mound in the earth dug for mud brick, and probably belongs to the same period. Seals like these were produced in central Anatolia—the nearest to ours are from Ahlatlibel (*Türk Tarih*, ii, 71–3) while the best counterpart in Alişar is of stone (*A.H.* i, 56–7, fig. 64, b 853)—but I know of no parallel in the west. No. 16 in fig. 12 is of grey terracotta, and may have served for making the concentric circles on the 'horns' and other phenomena described below. It was found on the dump but probably belongs, like the horns, to our latest period: cf. *A.H.* i, 147, fig. 184, b 2366, from Alişar II.

iii. *Various Small Objects.*

The function of the little ball, fig. 12, no. 9, is obscure, though one parallel was found in Alişar I b, others in Alişar II.[2] The ball from Kusura, period C, is of grey clay covered with small cavities each of which has a punctured hole in its centre. Fig. 12, no. 8, of buff polished clay, belongs to the same period and the same family. Another ball, in bone, appears in fig. 24, no. 7.

Equally curious is the cone-shaped object, fig. 12, no. 10, from area V, 98–97·5 m., i.e. period C. Material, grey-buff clay. Thin smooth discs, with diameters varying between 0·015 and 0·035 m., also deserve mention: three are from period C, and one from period B. The late specimens are decorated with linear patterns (fig. 12, no. 21), the early one with a series of dotted lines. The broken object in fig. 12, no. 24, of red clay with red-black slip (period C, early), may have been employed in the manufacture of textiles. Small 'gaming-pieces' or 'counters', like fig. 12, nos. 12–14, occur in terracotta, bone, and stone, the former showing signs of having been cut off at the ends. All are of period C.

iv. *Spindle-Whorls, Beads, and Discs.*

The various devices used in decorating the spindle-whorls appear in figs. 13, 14, and indicate considerable versatility on the part of their makers. The forms, more limited, are important in relation to the levels in which they were found.

Flat thin discs belong to the low levels, the thinnest—thinner even than fig. 13, no. 1—to period A, where they are often undecorated. These discs become gradually thicker at the centre or even at the edges, developing proportions like those of fig. 13,

[1] *P.F.K.* 74.

[2] *A.H.* i, 47, fig. 56, and 122, fig. 150, b 1527, 1919.

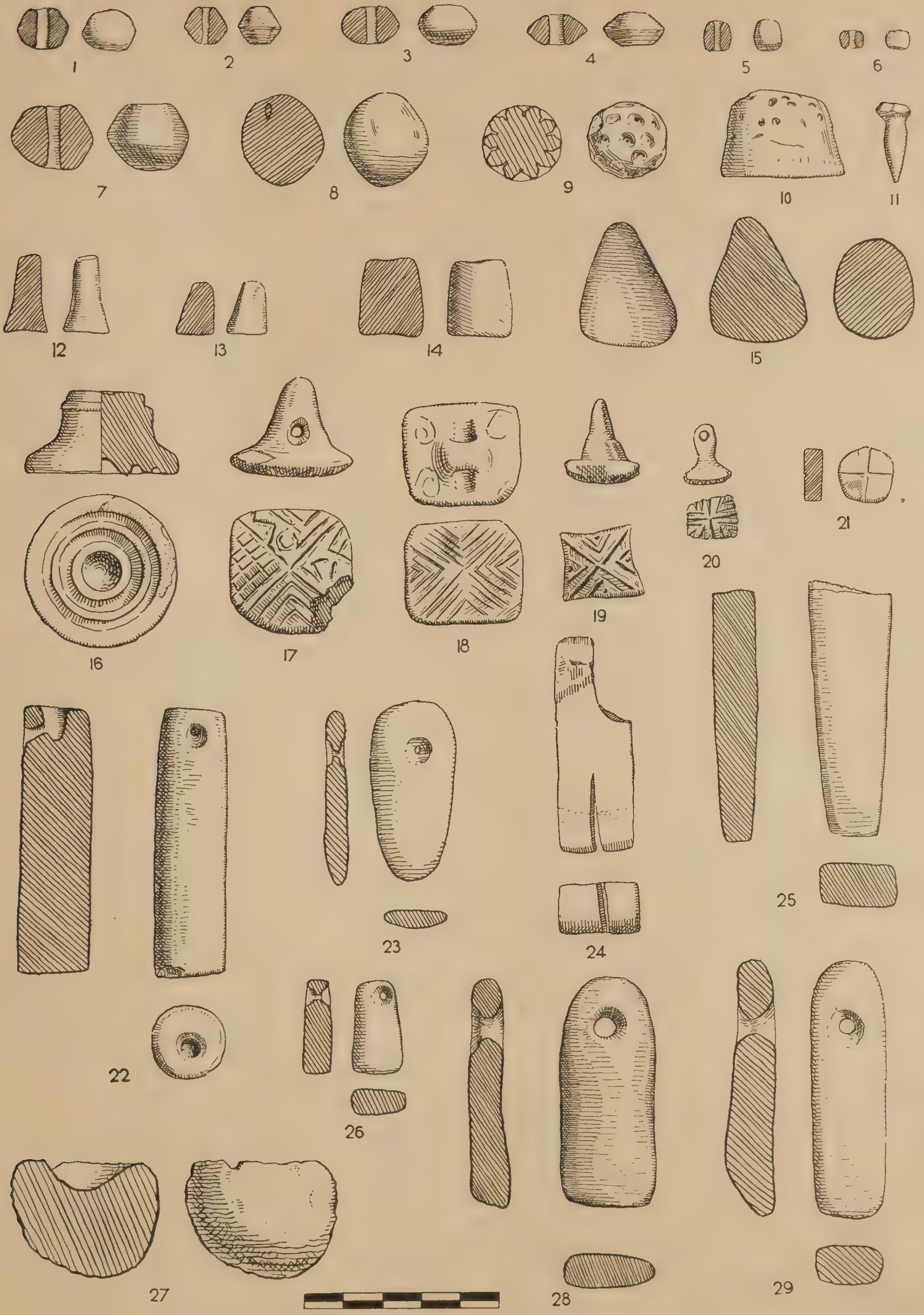
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Fig. 12. Various small objects; terracotta, stone, and bone

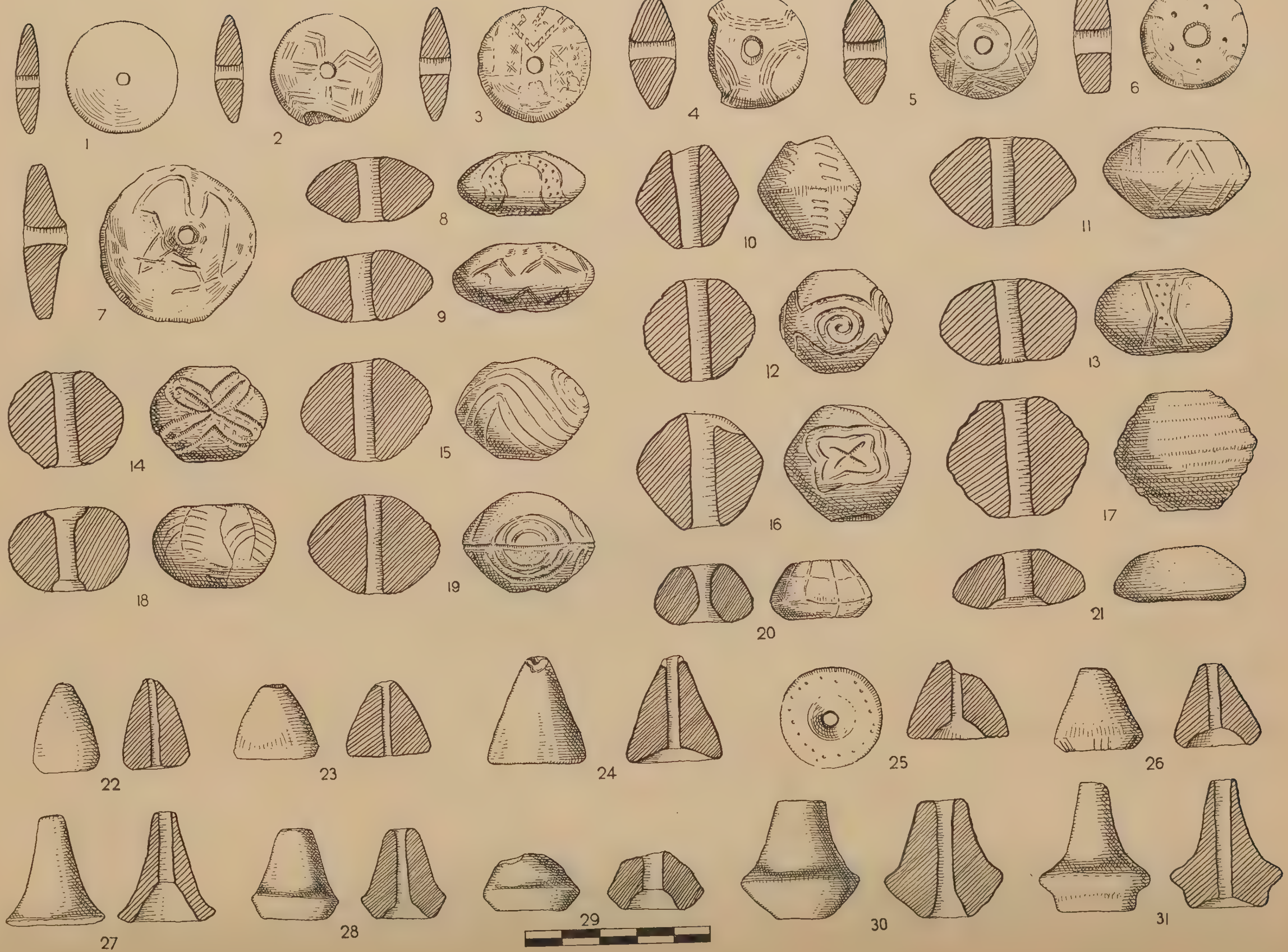
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Fig. 13. Spindle-whorls

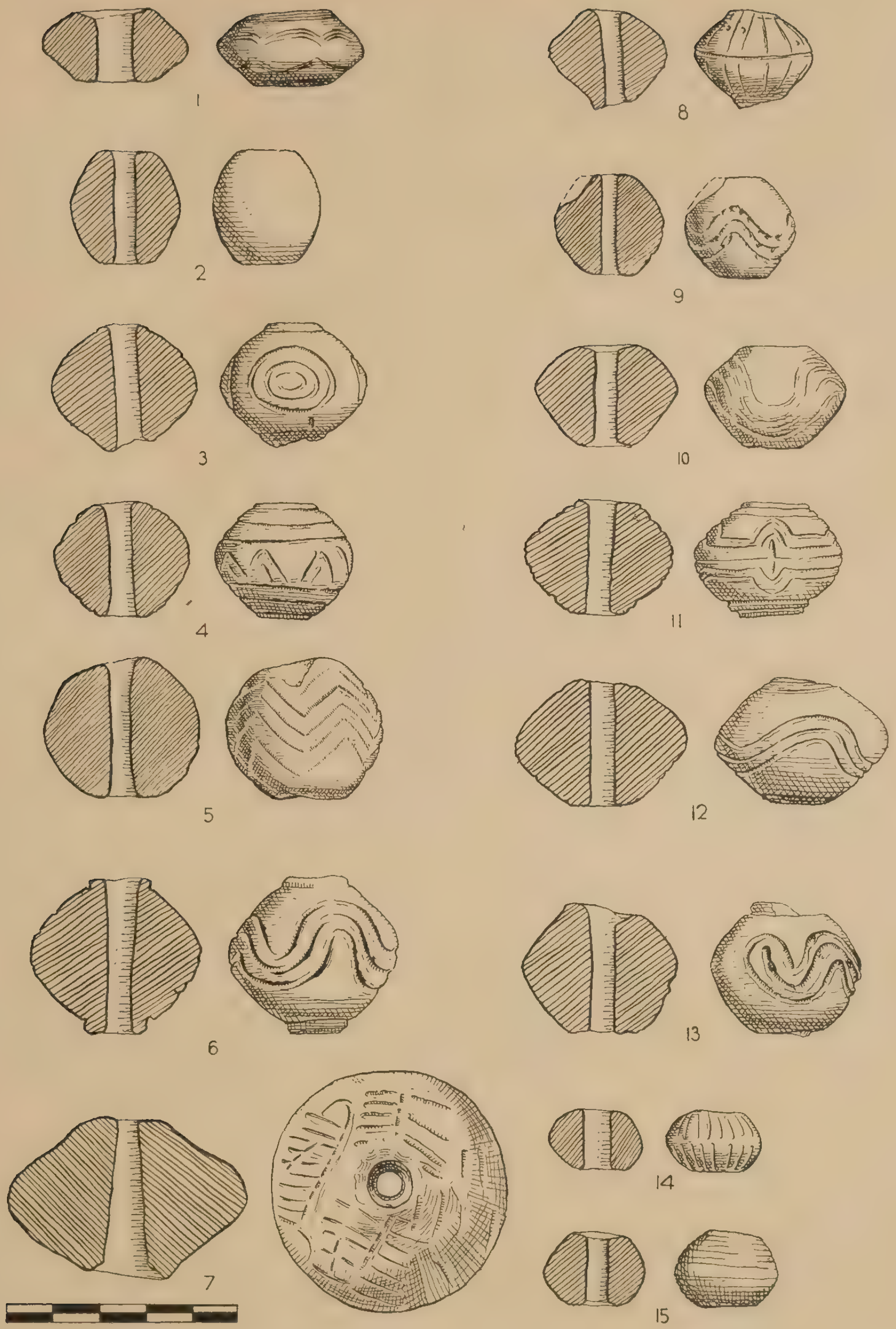
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Fig. 14. Spindle-whorls

no. 4 or no. 6. Contrast the sequence at Thermi[1] where the flat discs are associated with the later towns. The shape illustrated by fig. 14, no. 2, absent in period C, is never common: the whorls with angular sides like fig. 13, no. 10, are peculiar to period A and the earlier stages of B. Fig. 13, nos. 22–31, are products of period C, except that one whorl like no. 23 turned up in the lower B strata of area II. The other forms are well distributed in all strata. Of the individual examples, fig. 13, nos. 12 and 15, are interesting because adorned with spirals: the latter is from period B, the former from C. The whorl, fig. 13, no. 3, with its curious pattern, was apparently made early in period B.

A few terracotta beads exist (periods A and B), shaped like fig. 13, nos. 10 and 19; one resembles no. 6; but most beads are of stone.

In period A, discs are sometimes doubly pierced or cut into odd shapes (fig. 23, nos. 6 and 8).

v. *Arcs.*

These crescent-shaped objects are usually of red clay which may be grey in the core. They are pierced with a hole at each end, and fig. 15, no. 1, has two additional holes in the middle. Some are decorated with stamped patterns, of which a selection appears in fig. 15, nos. 2–4. Dozens of specimens were unearthed, all in the high levels (period C), except one which differs from the rest in being straighter and coarser; this was found in the low levels of period B, at 90·75–90·5 m.

Large arcs are a central Anatolian product, common in Alişar II[2] and sometimes present on the surface of mounds in the Afyon district. They may have some connexion with the much smaller arcs,[3] also pierced with holes, from western Anatolia, but the western arcs might have been amulets,[4] whereas the heavy ones from Kusura and Alisar seem altogether unpractical. They are too blunt for shuttles, too numerous for twisting ropes, and one would scarcely have guessed that similar loom-weights in wood are used to-day in certain parts of central Anatolia had it not been for the observations of Schmidt and von der Osten.[5]

vi. *Pounders and Spit-supports.*

On p. 71 of his *Prähistorische Funde in Kleinasien*, Dr. Bittel comments on the utensils which we usually call spit-supports and 'fire-dogs', pointing out that they have been rarely found in Anatolia in the pre-Hittite periods, and suggesting that this is accidental.[6] Our own discoveries support his contention, for we have seven examples belonging to period B, one of which comes from its lowest stratum and none from its higher strata (fig. 16, nos. 4–6). Some have cavities which might have held a spit, others are of the same square shape without any cavity, and one has punctures, perhaps merely decorative, on the top. The usual material is coarse greyish-red clay, but there is a specimen in the Afyon Museum of finer clay (fig. 23, no. 7) ornamented with a grooved herring-bone pattern, concerning the period of which I have no record. Fig. 16, no. 4, lay near the large oven in area II.

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[1] *Thermi*, 162.

[2] *A.H.* ii, 106, 107; i, 149, 150.

[3] *Thermi*, 159.

[4] *Ibid.* summarizes the references.

[5] *A.H.* ii, 106.

[6] See also *Thermi*, 164, for the absence of spit-supports on all Troadic sites outside Lesbos.

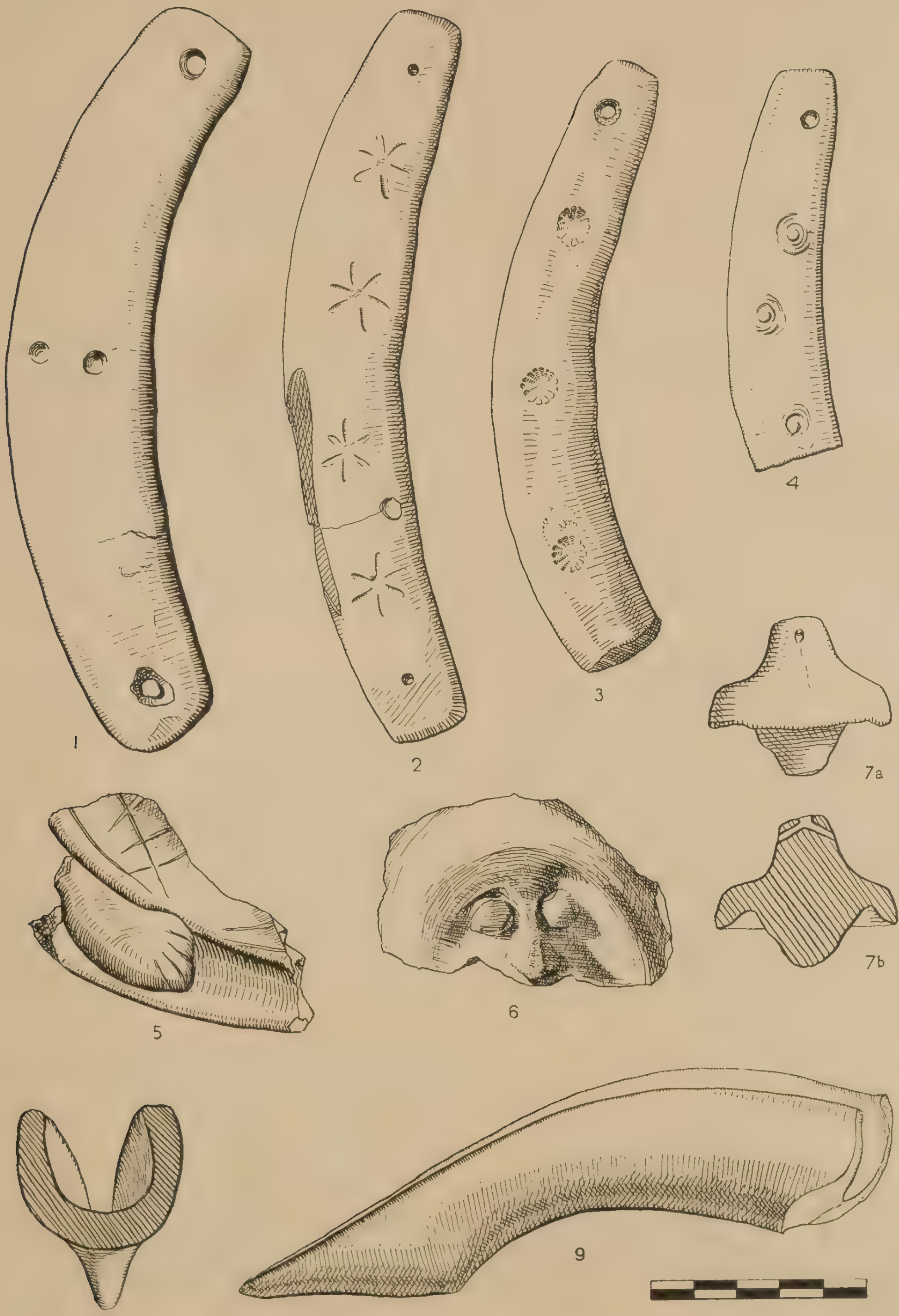
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Fig. 15. Terracotta arcs, nos 1–4; pottery, periods B, C, nos. 5–9

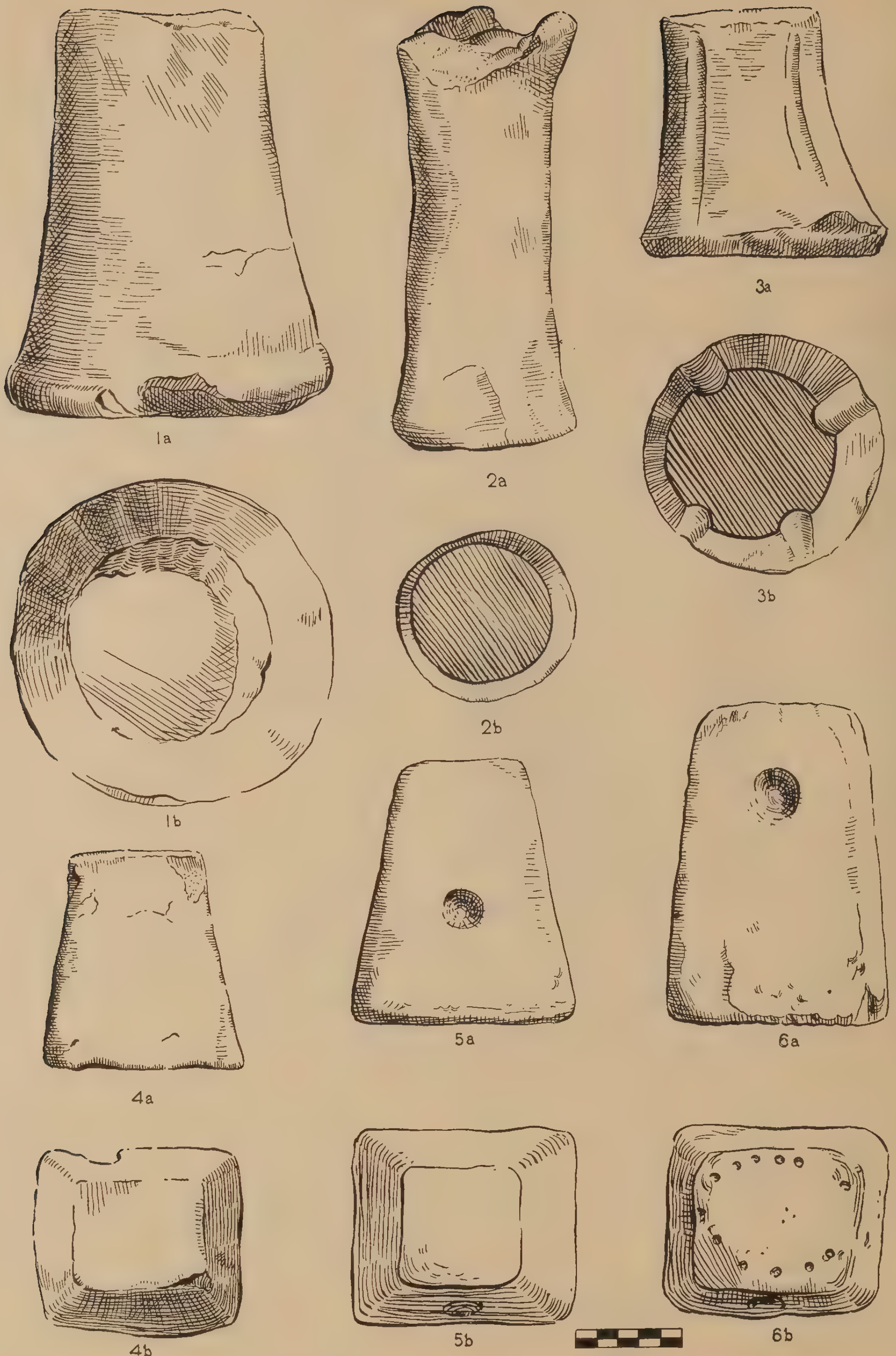
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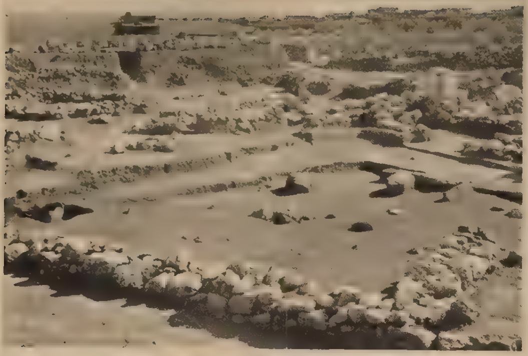
Fig. 16. Terracotta pounders and spit-supports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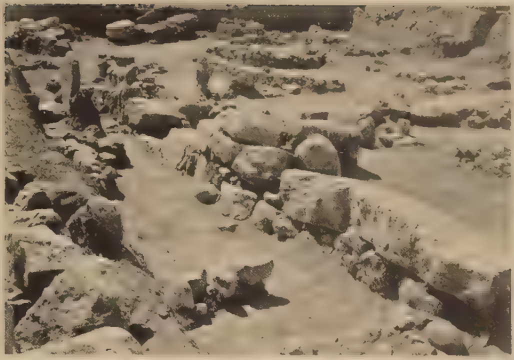
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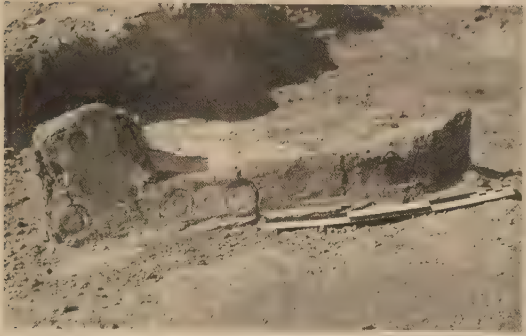
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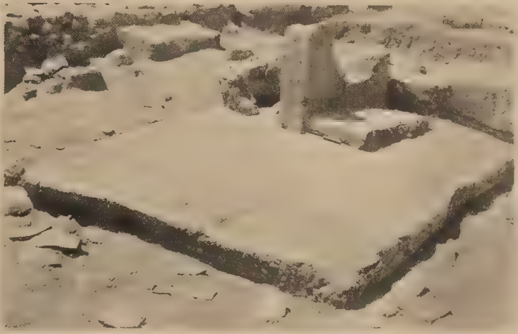
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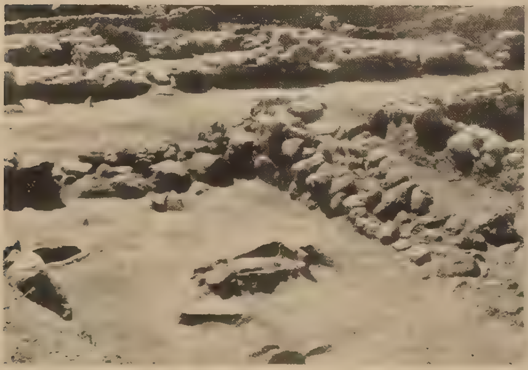
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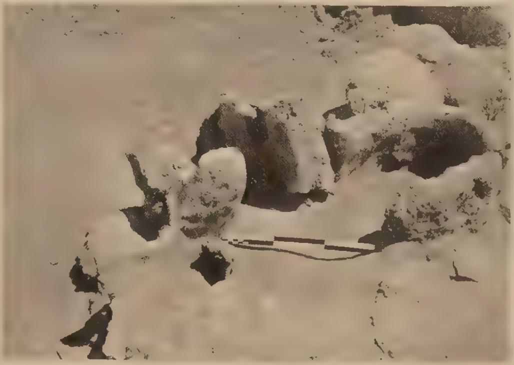
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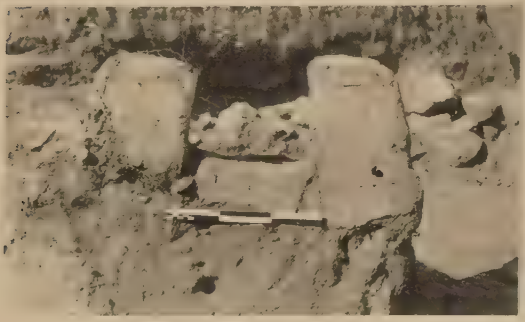
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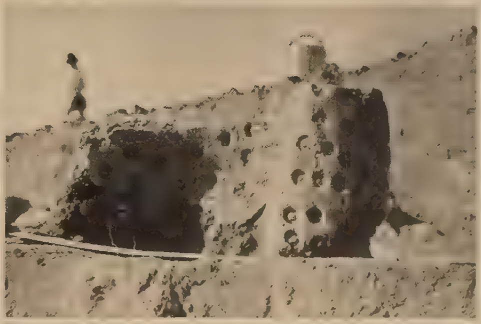
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1. 'Court', area III. 2. Walls, area VII. 3, 7, 8, Terracotta structures. 4. The 'shrine'. 5. Room 4, area VII. 6. Terracotta 'basins'.

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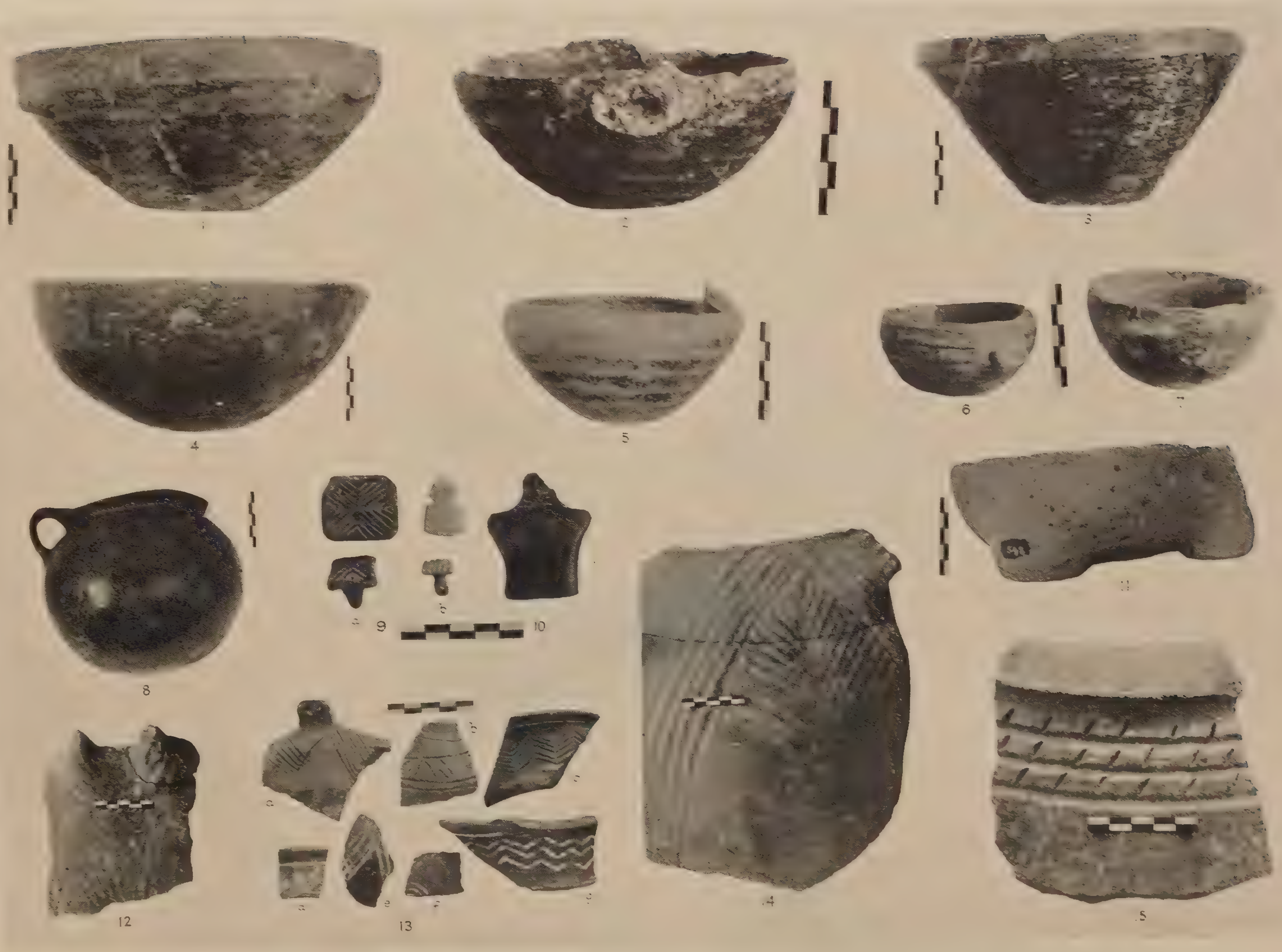
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1-8, 12-15. Pottery, various periods. 9-10. Seals and figurines, periods B. C. (9*a* above, stone seal; 9*a* below, terracotta seal; 9*b* above, stone idol; 9*b* below, bone seal) 11. Stone bowl, period C

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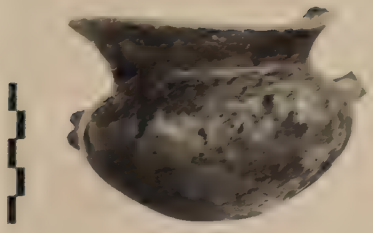
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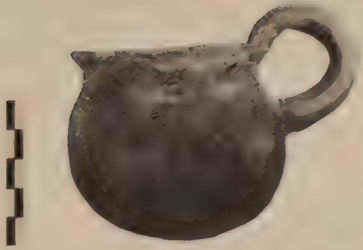
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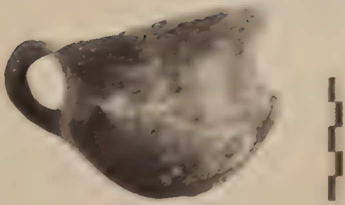
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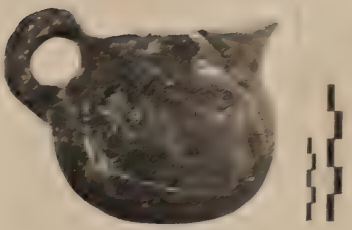
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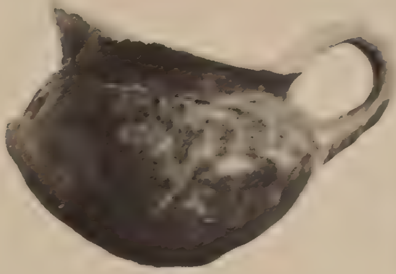
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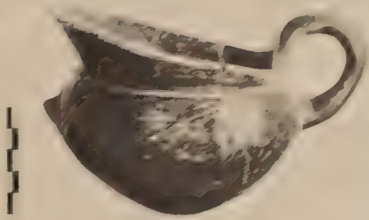
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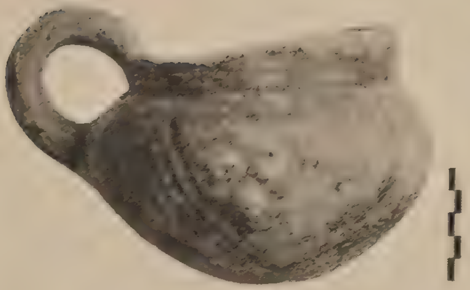
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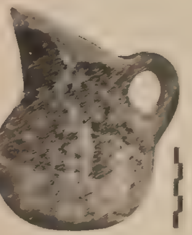
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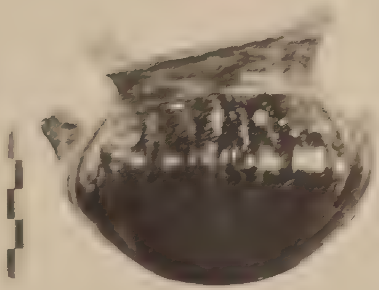
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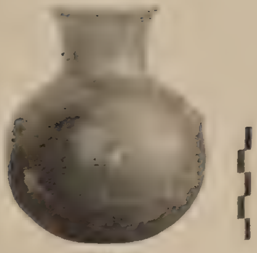
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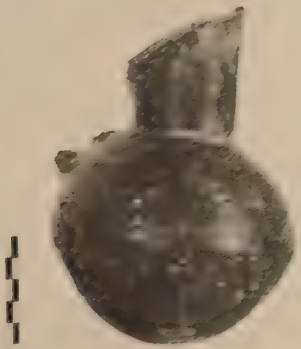
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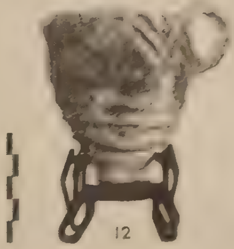
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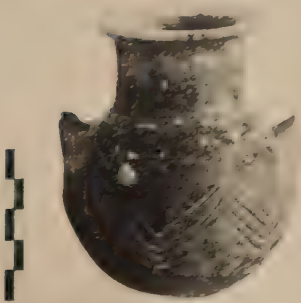
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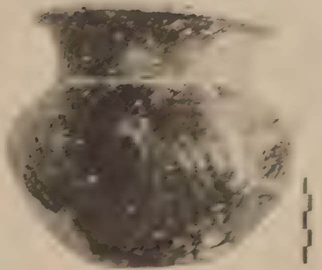
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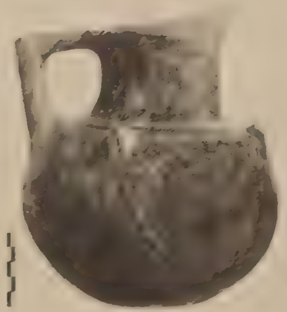
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Vases, period B

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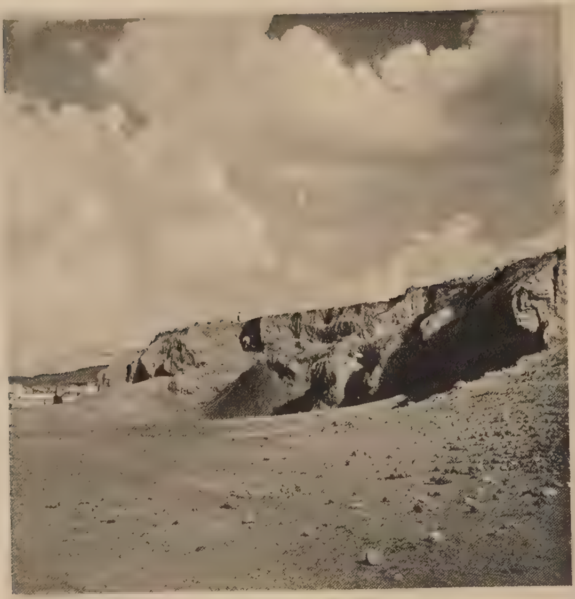

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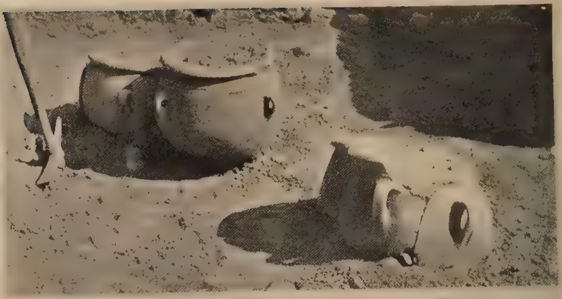

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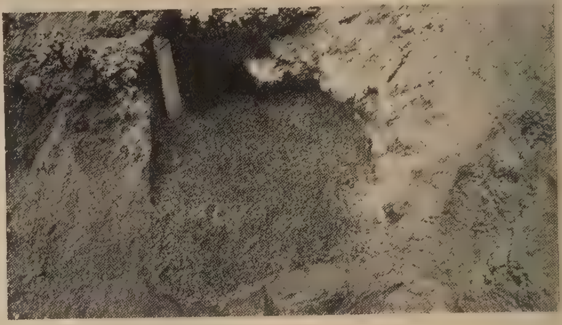

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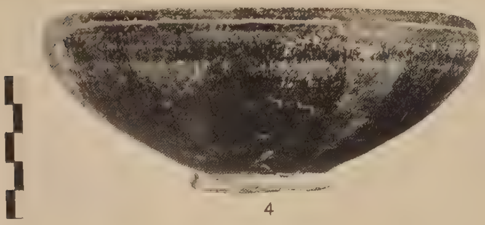

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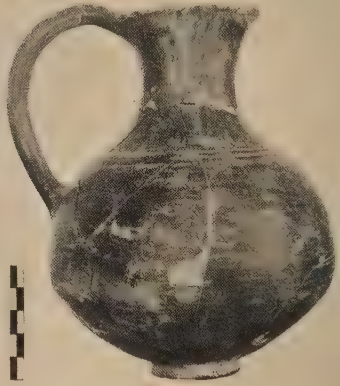

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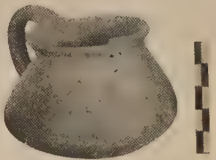

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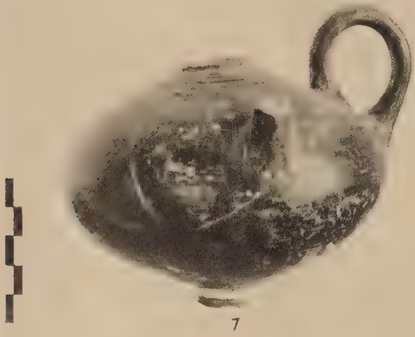

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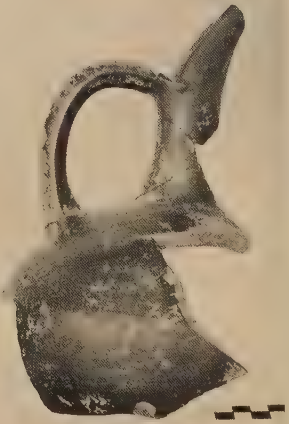

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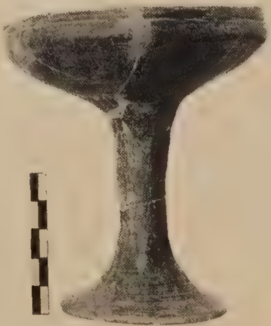

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1. The mound, seen from the valley. 2. Group of jars, area III. 3. Hoard of seeds, area I. 4-10. Vases, period C

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The cylindrical object illustrated in fig. 16, no. 2, may be a pounder, in which case it would have been grasped by the middle and either of the flat ends could have been used. Alternatively it may be a spit-support. It has several counterparts, all of greyish-red clay, and all from the upper strata, where no spit-supports of the class described above, and illustrated in fig. 16, nos. 4–6, have been discovered.

An enormous truncated cone from the shrine (fig. 16, no. 1) was at first considered to be a pounder, but experiments showed that it afforded no grip. Perhaps it acted as a support, not necessarily for a spit, but for anything that might have rested on its wide upper surface. Compare fig. 16, no. 3, from period B.

vii. *'Horns'*.

In describing the buildings of the latest period, I have referred to certain curious terracotta structures ending in horn-like attachments. The structures are of various kinds, and are all incomplete, so that considerable doubt exists as to their function.

Sometimes they consist of a bar with a horn at each end, the backs of the horns projecting beyond the bar, like a letter E without the middle stroke. The best preserved, both decorated with concentric circles, are shown on pl. v, 7 (area VII, 104·08 m.) and 3 (area III, 101·98 m.).[1] Behind the latter, one can detect the remains of a platform of sun-dried earth, with a smooth surface. These objects may have been hearths: though the soil near them showed no trace of blackening, it was red and rather hard round the 104·08 m. terracotta. Alternatively, they may have been altars: Mr. Barnett has pointed out to me the resemblance between the horns in profile (fig. 17, no. 1) and the Hittite hieroglyph usually interpreted as an altar.[2] In area VI at 103·55 m. is a hard platform with a bar and the base of a horn, also adorned with circles, at one end. The circles are on the outer face of the horn, while in front of the bar, on the opposite side to the platform, is soft red earth: the platform itself might be a hearth, since it recalls those at Thermi. There is an erection which is obviously a hearth in the large court, area III, at 101·37 m. It is backed against the whitewashed wall (fig. 4, *b*), has a distinct red platform with a terracotta brick, perhaps once one of a pair, near one end, and a quantity of charcoal lying in the angle between the brick and the wall. But this is not an exact parallel, especially since the brick may not be the base of a horn.

The most curious method of using horns is illustrated by the terracotta 'basins' in area VIII at 102·44 m. There are three of them: of a fourth no trace remained. Their arrangement is reproduced in pl. v, 6: it seems clear that each was finished off by two horns, and there is little doubt that the hard terracotta on which they stand projected beyond them. They are decorated with punched holes: so too is another terracotta, in area III at 102·25 m., which, being semicircular in plan, may have been part of a similar group (pl. v, 8).

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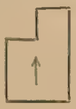
[1] To avoid complication we omitted it, together with the examples at 103·55 m. in VI and 102·25 m. in III described below, from the plan on pl. iv. Both the terracottas in III belong to the later architectural stage, p. 13, while the hearth in III is earlier.

[2] Bossert, *Šantaš und Kupapa*, 84. The sign in question is 

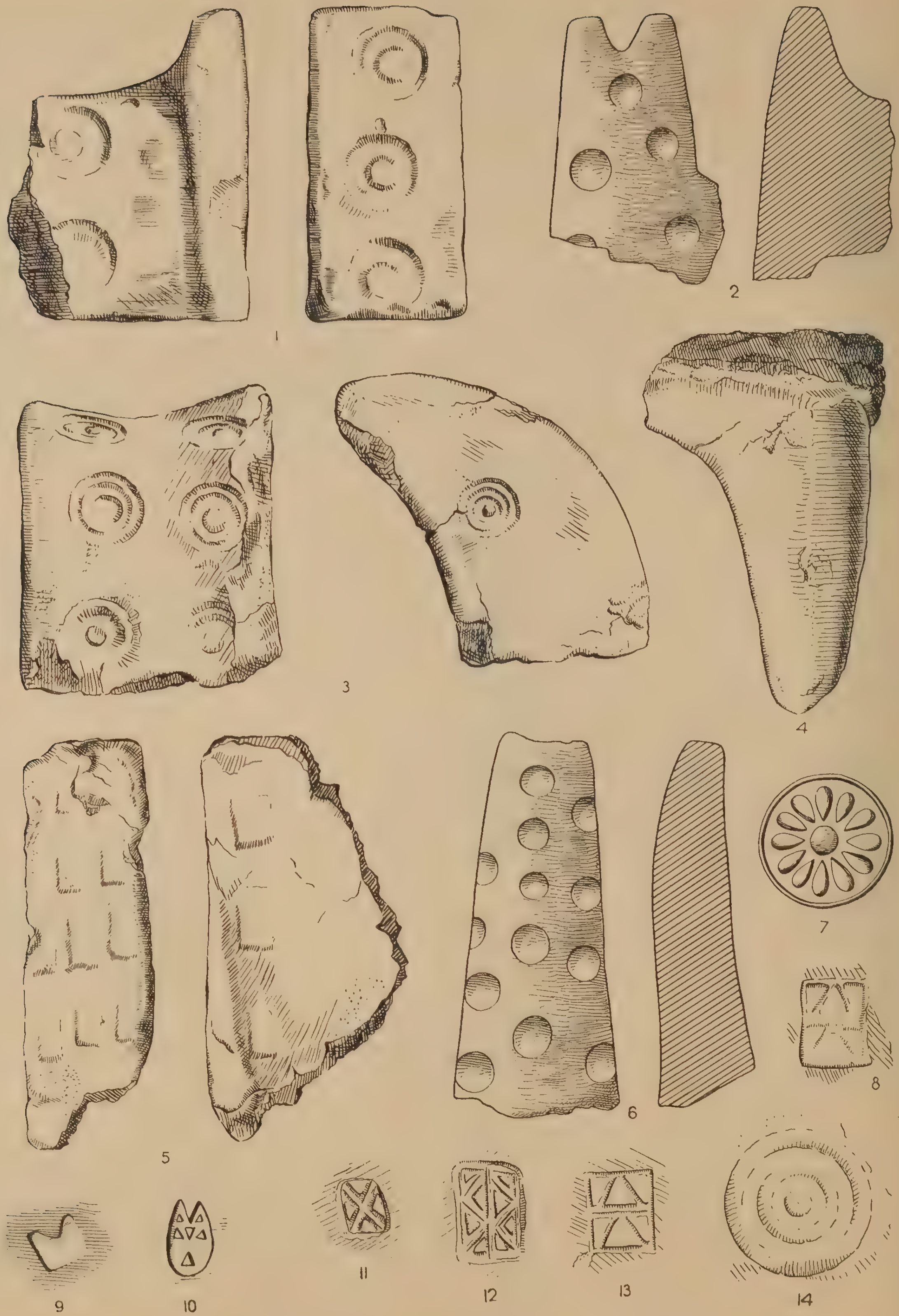

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Fig. 17. Terracotta horns and leg; stamped patterns; nos. 1–6 ($\frac{1}{5}$); nos. 7–14 ($\frac{2}{5}$)

In the earth of the surface half-metre a number of horns came to light, broken off the structures to which they belonged. I imagine that those with tapering profiles (fig. 17, nos. 2, 6) were once part of a basin, and those which are comparatively square (fig. 17, nos. 1, 5) resembled pl. v, 7. Fig. 17, no. 3 is exceptional in being curved backwards. They show a variety of ornament (fig. 17, nos. 7–13), produced by means of a stamp like the one with concentric circles (fig. 12, no. 16).

To the same class of object belongs the column of the 'shrine' (p. 12; pl. v, 4), which was not one of a pair, but isolated. Fig. 17, no. 4 may be the leg of a terracotta vessel.

METAL

The metals represented at Kusura are copper[1] (all periods, though A only yielded a couple of pins), lead (one fragment, one ring, period C), gold (one piece, period C), and iron (one fragment in the top stratum, one drill from the surface earth, one arrow-head from the dump). The comparatively late introduction of lead corresponds with its tardy appearance at Alişar;[2] the almost complete absence of iron is, however, astonishing when we consider how rich the Hittite centres were in that material.

i. *Pins and Needles* form the great majority of our finds, and the examples on fig. 18 are as follows:

No. 1. A late variant of 2.

No. 2. A needle of a type common here at all periods. It is present at Troy, absent at Alişar.

No. 3. Needle, with hole part-way down the shaft (toggle-pins). We have three specimens, all from period B. No such needles occur at Thermi, and those from Troy and Alişar have heads (*SS.*, nos. 6405–13, *A.H.* i, 60, fig. 69, b 512; contrast *op. cit.*, 161, fig. 202, b 1254).

No. 4. Square-headed pin, of primitive type. One only, period B. Cf. *Thermi*, 166, fig. 48 *a*, 30·44, and its counterparts, belonging to the earlier three towns.

No. 5. Oval-headed pin. One only, period B.

No. 6. Round-headed pin. One only, period C. At Thermi also this neat, round head is not earlier than the middle Bronze Age (cf. *Thermi*, 166, fig. 48 *a*, 32·19): at Alişar, it goes back to period I (*A.H.* i, 58, fig. 67, b 15).

No. 7. The head is angular in profile, round in horizontal section. Periods B and C. This type, easily made, was popular at various periods in Anatolia.

No. 8. The head has flattened sides. A single specimen, period C.

No. 9. The head is quadrangular in the horizontal section. Periods B and C. A common Anatolian type.

No. 10. Unique at Kusura, though variants occur elsewhere. Period C.

No. 11. The illustrated pin comes from period C; another like it comes from period B. A variant in Alişar II (*A.H.* i, 158, fig. 200, b 1286).

Nos. 12, 13. Roll-headed pins. Present in all periods, including A (one only).[3] For discussion, see *P.F.K.*, 50, *Thermi*, 166, 167.

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[1] Analyses by Professor Desch, p. 64.

[2] *A.H.* i, 151.

[3] The other pin from A has no head.

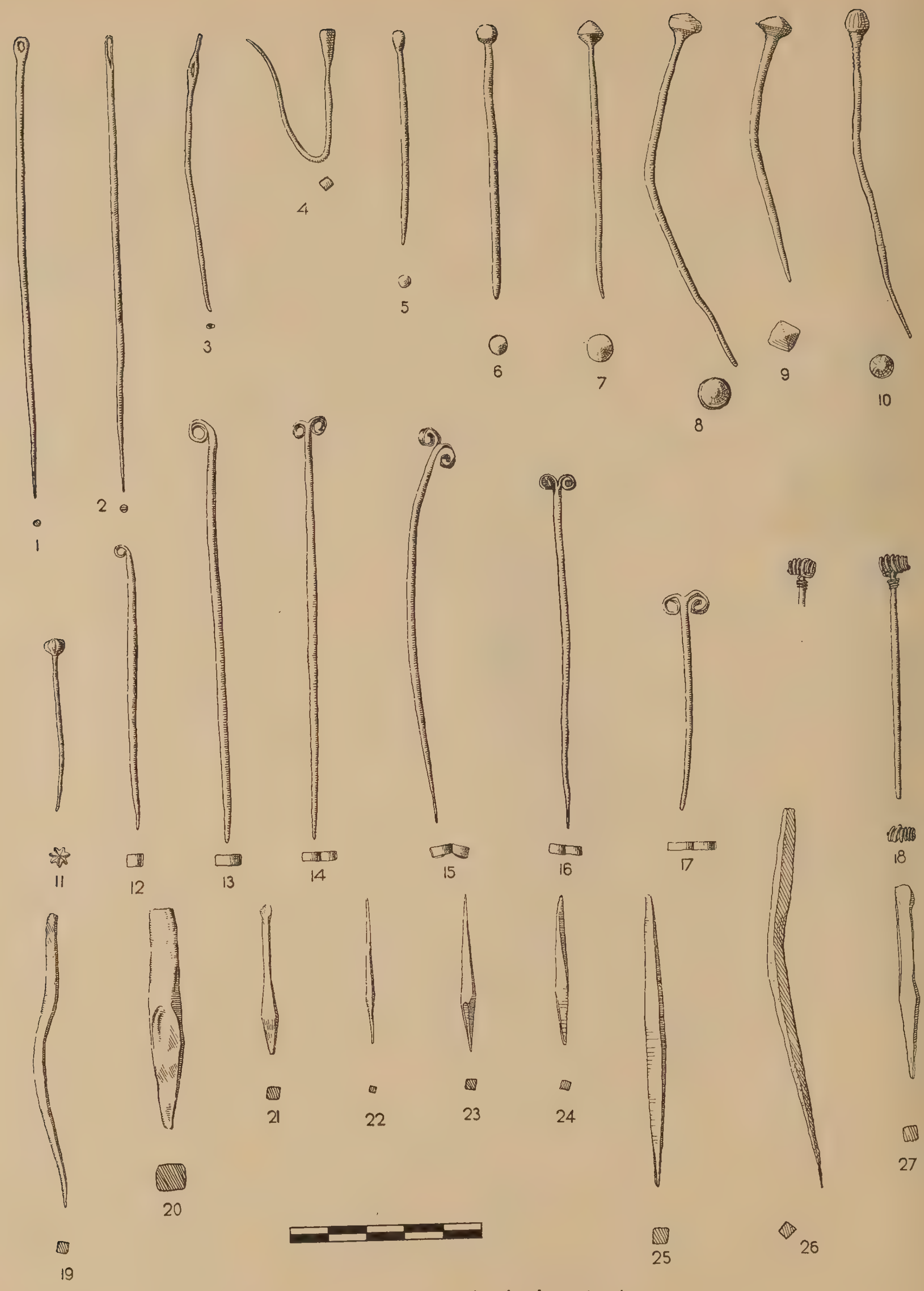
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Fig. 18. Copper pins, implements, etc.

Nos. 14–17. Double roll-headed pins. Period C. Cf. *SS.*, nos. 6399–6402, and the widely distributed examples quoted by Childe, *Liverpool Annals*, xxiii, 118.

No. 18. Unique at Kusura. Period C. For discussion, see *P.F.K.*, 49, 50.

ii. *Small Tools; Drills, Chisels, etc.*

Drills are less common and less well distributed than at Thermi or Alişar. Most of our specimens, including nos. 21–5, fig. 18, are from period C, though no. 27 is from a stratum in pit IX, which might be B or C. They are more often square in section throughout than partly square and rounded near the tip. No. 26 seems to be a large drill, with one end broken. No. 25, period C, has its point blunted by use. No. 21, period C, is the only instrument with one end flattened like a minute chisel (cf. *Thermi*, 168). No. 19, period C, may be a nail with the head broken off. No. 20 will be described under the weapons.

iii. *Large Implements.*

The long chisel, fig. 19, no. 1, bought for the Afyon Museum before the excavations began, is said to come from the site. Length, 0·18 m.; no flanges; blade blunt and much worn at the tips; butt worn and partly missing. For the type in Anatolia and elsewhere, see *Thermi*, 169, 170, *P.F.K.*, 50, 51. Punarbaşi Göl is not far away, and the chisels found there should be compared with ours (*B.S.A.* xviii, 93, fig. 9).

iv. *Weapons and Blades.*

Fig. 19, no. 6 is a knife with a single cutting edge and a short tang. Period C. No. 7, belonging to the same period, is a sickle-shaped blade, very blunt, damaged at both ends. E. F. Schmidt, who publishes a similar sickle[1] (*A.H.* i, 154, 156, fig. 196), says that at Alişar the type is confined to stratum II.

The arrow-heads, fig. 19, nos. 2, 3, 4, all from period C, are variants of the form represented by no. 4, for all have a mid-rib, whether slightly or strongly marked, and none is barbed though the broken end of no. 2 gives the impression of a barb in the drawing. This form is the one associated with the Hittite period, described in Bittel, *Bogazköy*, 31. The iron arrow-head, no. 5, was picked up on the dump.

The thick, solid point, no. 20 on fig. 18, may be a truncated spear-head. Period C.

v. *Ornaments and Miscellaneous Objects.*

Small rings are not uncommon: see fig. 19, nos. 14 and 15. Five copper ones come from period C, and a fragmentary example from the pithos burial, period B, in area V. Part of a larger, more solid ring lay in the lower strata of area V, also period B. A lead ring, rather bent, which may be merely an accidentally twisted piece of lead wire, was unearthed in period C: cf. *A.H.* i, 164–5, fig. 206.[2]

No. 8 on fig. 19 may be a fibula-bow: another possible example was produced, like no. 8, from the uppermost strata. If they are really fibulae, they show that the settle-

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[1] He implies (*op. cit.*, 154) that its blade is slightly serrated. Our blade is too worn to show the nature of its cutting edge.

[2] E. F. Schmidt suggests that the rings at Alişar were used as small change: *A.H.* i, 165.

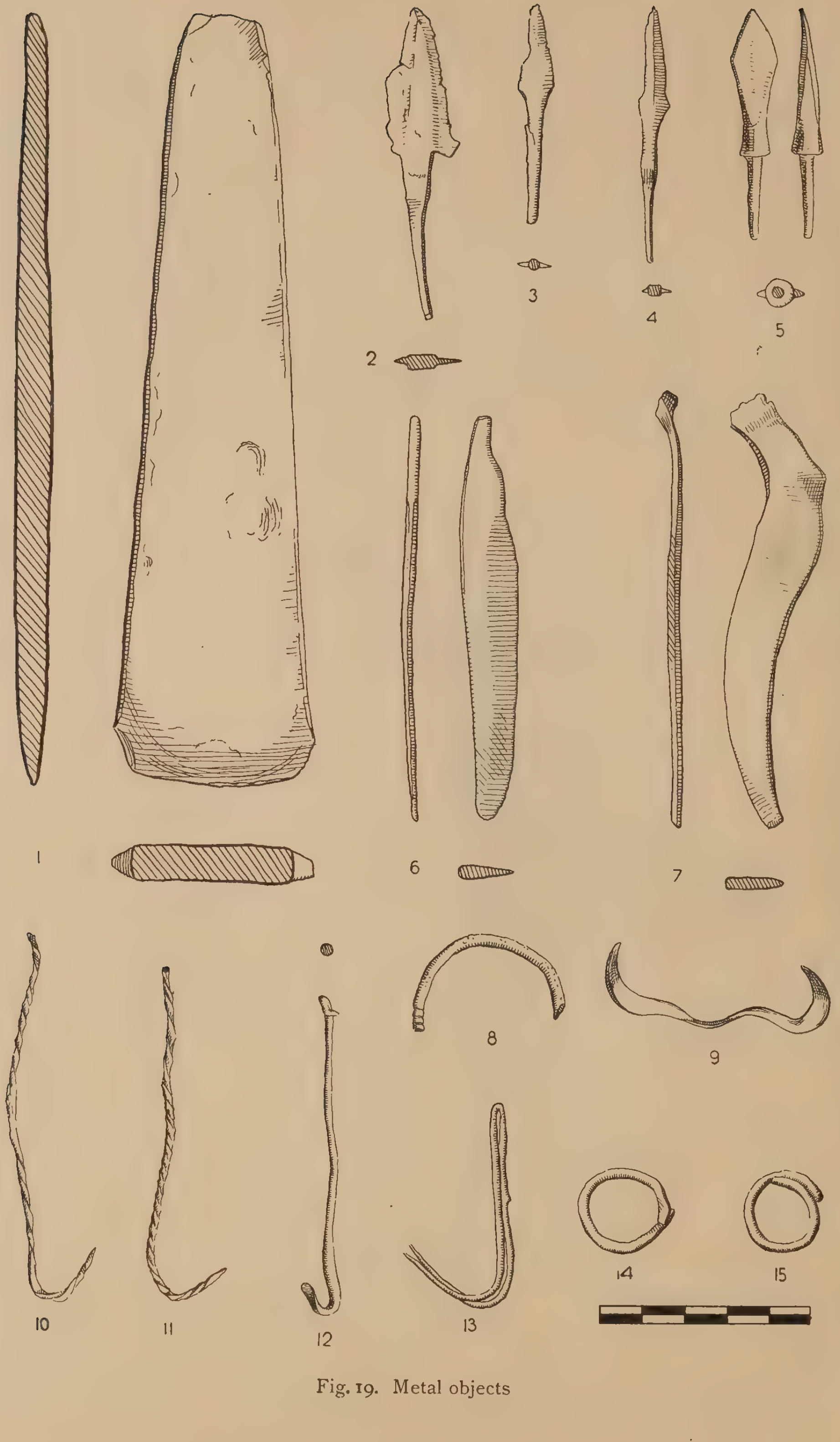
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Fig. 19. Metal objects

ment survived into the post-Hittite period. For the form, absent at Bogazköy, cf. *A.H.* i, 266, fig. 352, b 2484.

The single hooks, fig. 19, nos. 10, 11 (period C), are like those from Thermi (*Thermi*, 205, pls. XXV, XLVII): the hook no. 12, with flattened end, also period C, is less easy to parallel. The double hook, no. 13, is contemporary.

No. 9 is the only piece of gold yet discovered; it is a horn-like object, lunate in section, of unknown function, and it belongs to the very earliest stage of period C.

Stone

On a site where metal tools and weapons are few, one would expect stone implements to be both fine and numerous. This is not the case. Neither is the workmanship outstanding, nor are any stone objects really common except flints. The rarity of celts is in startling contrast to their popularity in north-western Anatolia; the axes display an irregularity of form which is disappointing; the flints are monotonous; the mace-heads are rather for use than for show. Only the small objects like idols, beads, and the seal show the finished technique that is the result of conscientious workmanship.

i. *Flints.*[1]

Knives are made of flint or chert, white, yellow, or grey. Most have been terminally snapped but there are a few cases of neat, square, terminal retouch: only rarely has the bulb been retained. They may be classified as follows:—

1 *a*. Fairly large knives like fig. 20, no. 17, are a distinct type; unifacial except for slight retouching on the under face; sometimes with one cutting edge more or less serrated, sometimes with two. The material is opaque yellowish-white flint. A friction polish can usually be seen on the under face. Great quantities of these knives were found in the upper strata, and no certain example can be assigned to periods B and A. There are indeed fragments from the lower levels which might possibly belong to the class in question, but more probably represent a smaller, more compact variant, 1 *b*, which is less unevenly distributed. Fig. 20, no. 18 differs from the norm in having no retouching on the under face and scarcely any on the upper one.

2. Knives of opaque grey flint. Fig. 20, no. 15. Technique as type 1 except that the work on the under face is less finished. None of them is complete. All periods.

3. Small knives, sometimes miniature, of flint or chert; yellow, red, grey, or agate-like. Fig. 20, nos. 6–10. Technique as type 1. All levels.

4. Obsidian knives are always small, sometimes miniature. Fig. 20, nos. 4, 5. Technique as type 1. Origin of the obsidian not yet identified. Periods B and C; examples also from earth surrounding the graves in the cemetery.

Sickle-blades, intended for mounting on a wooden handle, are rare but occur in all levels. Fig. 20, nos. 2 and 3 are characteristic except that the latter has a battered unilateral edge instead of the usual cortex. No. 19 is a sickle-blade on a larger scale.

The Chisel, no. 16, is unique, a fine specimen with a cortex on both faces and secondary work at one side of the cutting edge only. Period C.

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[1] I am indebted to Miss Caton Thompson for reading the section on flints and making corrections and suggestions.

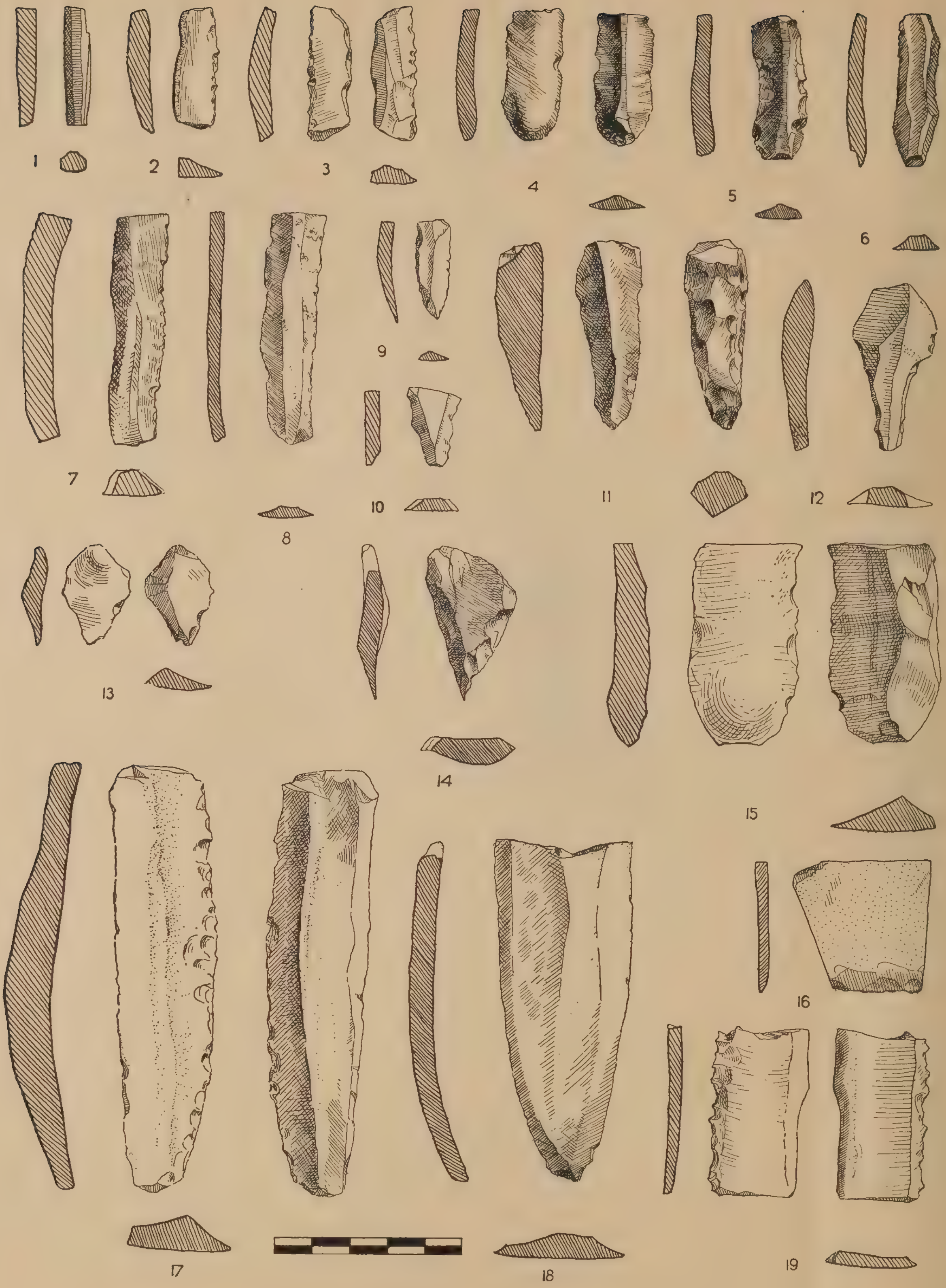
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Fig. 20. Flint implements

The blunt-pointed implement, no. 11, is most carefully finished, with secondary work not only on the lateral edges, but on the whole of one face. The butt end is broken. Material, brown chert. Period C.

Sharp-pointed implements. Nos. 12 and 14 are probably borers, not arrow-heads. For the rarity of arrow-heads in western Anatolia, see Bittel, *P.F.K.*, 47, 48. No. 12 belongs to period C, no. 14 to period B.

Scrapers seem to be very uncommon. A possible example is no. 13 from the earlier stages of period C.

Two obsidian *cores* were found, one from B, low stratum (fig. 20, no. 1), the other unstratified. There must have been some which eluded us.

ii. *Celts.*

Only three complete celts and one fragment were found: they are of common types, having little claim to our interest beyond their scarcity.

Fig. 21, no. 1. The surface is ground and polished all over. Material, blue-black igneous rock. Period C.

Fig. 21, no. 2. Surface ground; tips of blade chipped. Material, dark igneous rock. From V, 95 m., i.e. the later stages of period B.

Fig. 21, no. 3. Surface polished all over. Material, green serpentine. Bought in the village.

iii. *Axes.*

Pierced axes may be either long, like fig. 21, no. 7, or short, like fig. 21, no. 8. The profile varies but all are essentially of the same type, though some are bored completely and some are not. This type, if a collection of such irregular variants deserves the name, is known at Alişar[1] but not at Thermi[2]; among the items from Troy in Schmidt's catalogue, *SS.*, no. 7219 seems to be the nearest. Several parallels, however, can be identified in mainland Greece.[3]

Two of the longer axes come from the strata of period B, and one from the stratum transitional between B and C. Of the shorter axes, two belong to period B and one to period C. Butt ends, rounded and somewhat irregular, occur in all strata, including those of period A: a more tapering form is recorded from period B.

The so-called 'battle-axe', with down-curved or hammer-shaped butt, was used both in central and in western Anatolia[4]: the spreading blade of our no. 7 on fig. 22 gives the impression of belonging to an axe of this class.

Fig. 21, no. 4. The hole is partially bored and is polished. Material, green igneous rock. Found by a villager digging mud brick.

Fig. 21, no. 5. An unfortunate oversight has left the material unrecorded. If the rock is soft, this specimen should belong to the class described on p. 47. Period B.

[1] *A.H.* i, 64, fig. 73, b 388 (Alişar I); 209, fig. 273, a 1006 (Alişar III). See also *P.F.K.* 77.

[2] *Thermi*, 192, describes hammers with somewhat similar profile, but of soft stone and never bored completely.

[3] e.g. Montelius, *La Grèce préclassique*, i, pls. 1, 12, 11, 24; Goldman, *Eutresis*, 207, fig. 278, no. 7.

[4] *P.F.K.* 42–5.

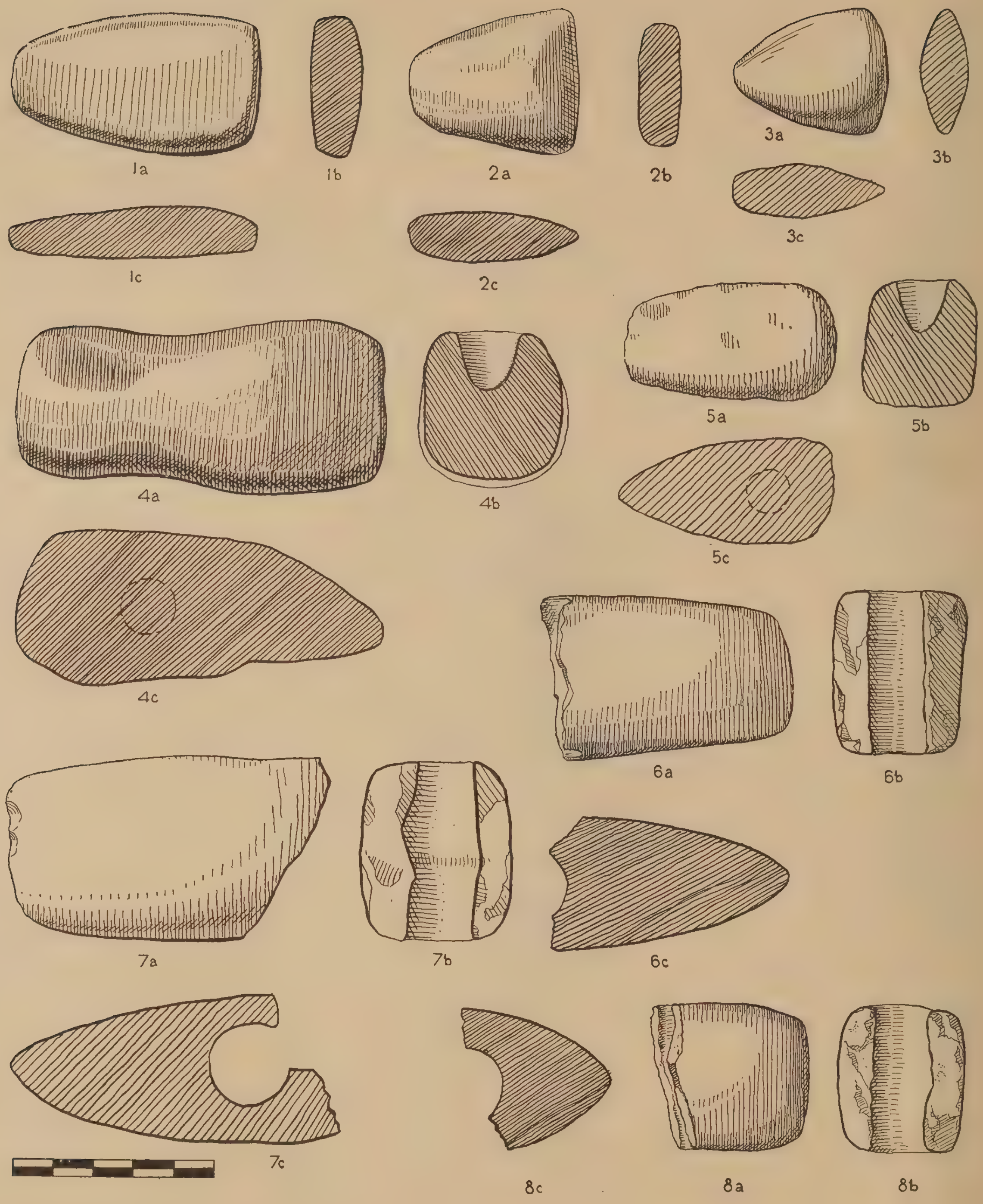
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Fig. 21. Stone axes

Fig. 21, no. 6. A well-ground axe, with a hole bored from both sides, and partly polished. Material, green igneous rock. From V, 95·20 m., transitional between B and C.

Fig. 21, no. 7. Surface, ground. Material, dark igneous rock. Period B.

Fig. 21, no. 8. Well ground, with a hole bored from both sides and partly polished. Material, green igneous rock. Found by a villager digging for mud brick, but illustrated because neater than most of the stratified short axes.

Fig. 22, no. 6. Butt end. Surface ground, hole bored from one side and not polished. Material, green speckled igneous rock. Period B.

Fig. 22, no. 7. A spreading blade, blunted. Surface ground, hole bored from one side and partly polished. Material, greenish black igneous rock. Period C.

Fig. 22, no. 8. Surface ground, hole bored from one side and polished. Material, green speckled igneous rock. Period B, early.

iv. *Mace-Heads.*

These are of igneous rock, varying from the more or less spherical form to the spheroid with flattened ends, the angular profile of fig. 22, no. 2, being so far unique. All are broken through the hole, except one fragment which has not been bored completely. There are six examples from period B, and two from strata transitional between B and C.

At Alişar, mace-heads appear for the first time in the middle strata of period I*a*;[1] the earliest mace-head from Thermi may belong to Town I or to Town II;[2] no certain specimens can yet be assigned to Troy I or to any contemporary site in western Anatolia.[3] In Crete, on the other hand, these weapons date back to the neolithic age, and in Egypt to the pre-dynastic period.[4]

Fig. 22, no. 1. Hole bored from one side and polished. Material, green igneous rock, speckled white. Period B, early.

Fig. 22, no. 2. Hole bored from both sides, but not polished. Surface, ground. Material, green igneous rock. From V, 95·63 m., transitional between B and C.

Fig. 22, no. 3. Hole bored from one side and polished. Surface, ground. Material, light green igneous rock speckled white. Period B, middle.

Fig. 22, no. 4. Hole bored from one side, unpolished. Surface, ground. Material, green igneous rock. Period B.

Fig. 22, no. 5. Hole bored from one side only, and polished throughout. Material, dark green igneous rock. Period B.

v. *Hammers of Comparatively Soft Material.*

There are only two or three. One, from period A, is of grey rock, possibly limestone, bored from both sides, and shaped like fig. 21, no. 5, except for the working end, which is blunted. Another, from period C, closer to no. 5 in shape, is of whitish limestone, partially bored. Whether no. 5 itself should be included in this list, I shall know after revisiting the Afyon museum (see p. 45).

vi. *Pounders.*

Some are conical like fig. 23, no. 1, some flat at the upper end like fig. 23, no. 2, some quite irregular. All are of soft material such as marble, limestone, or schist, except

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[1] *P.F.K.* 78.

[2] *Thermi*, 182.

[3] *P.F.K.* 46.

[4] *P. of M.* i, 54.

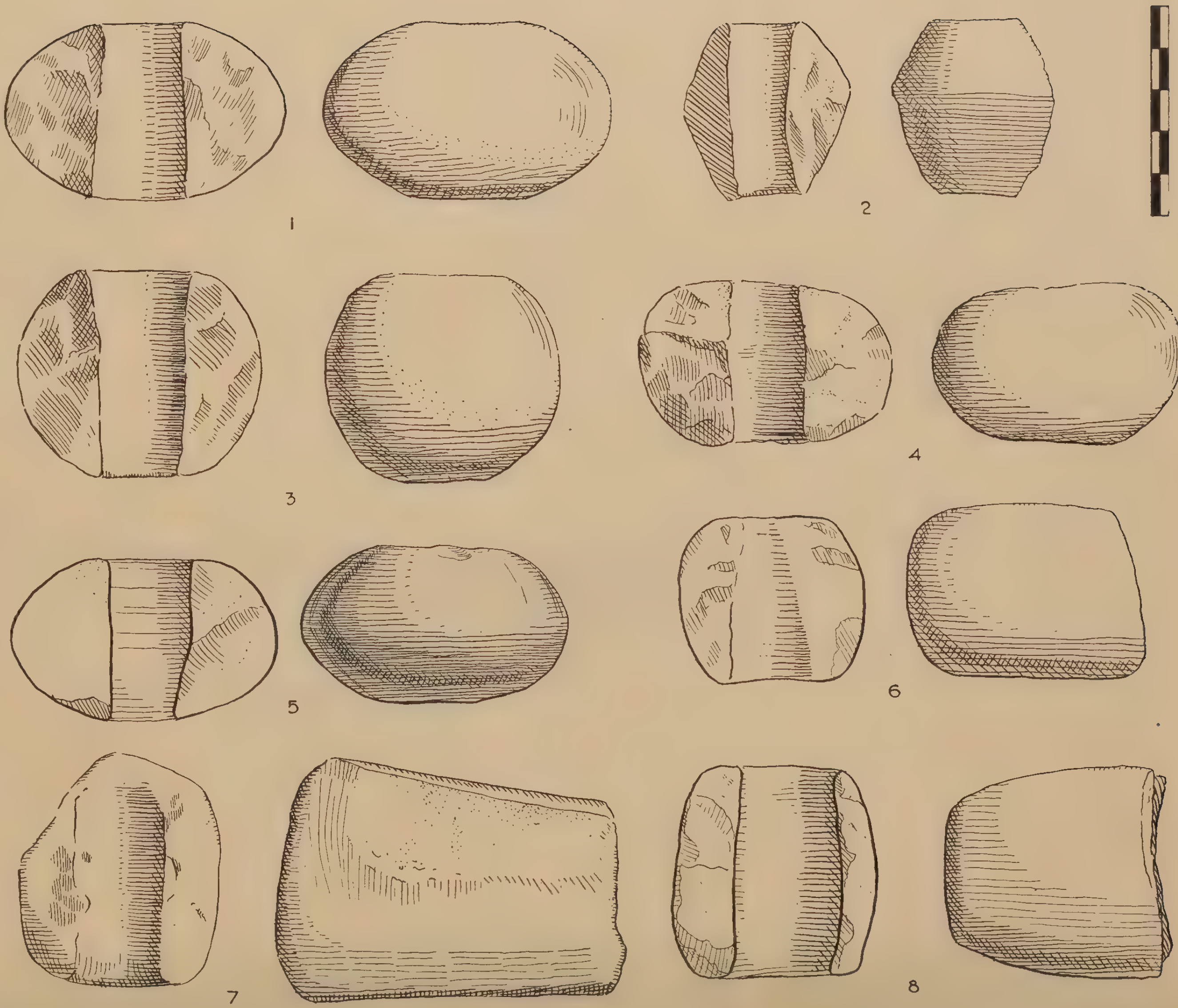

Fig. 22. Stone mace-heads and axes

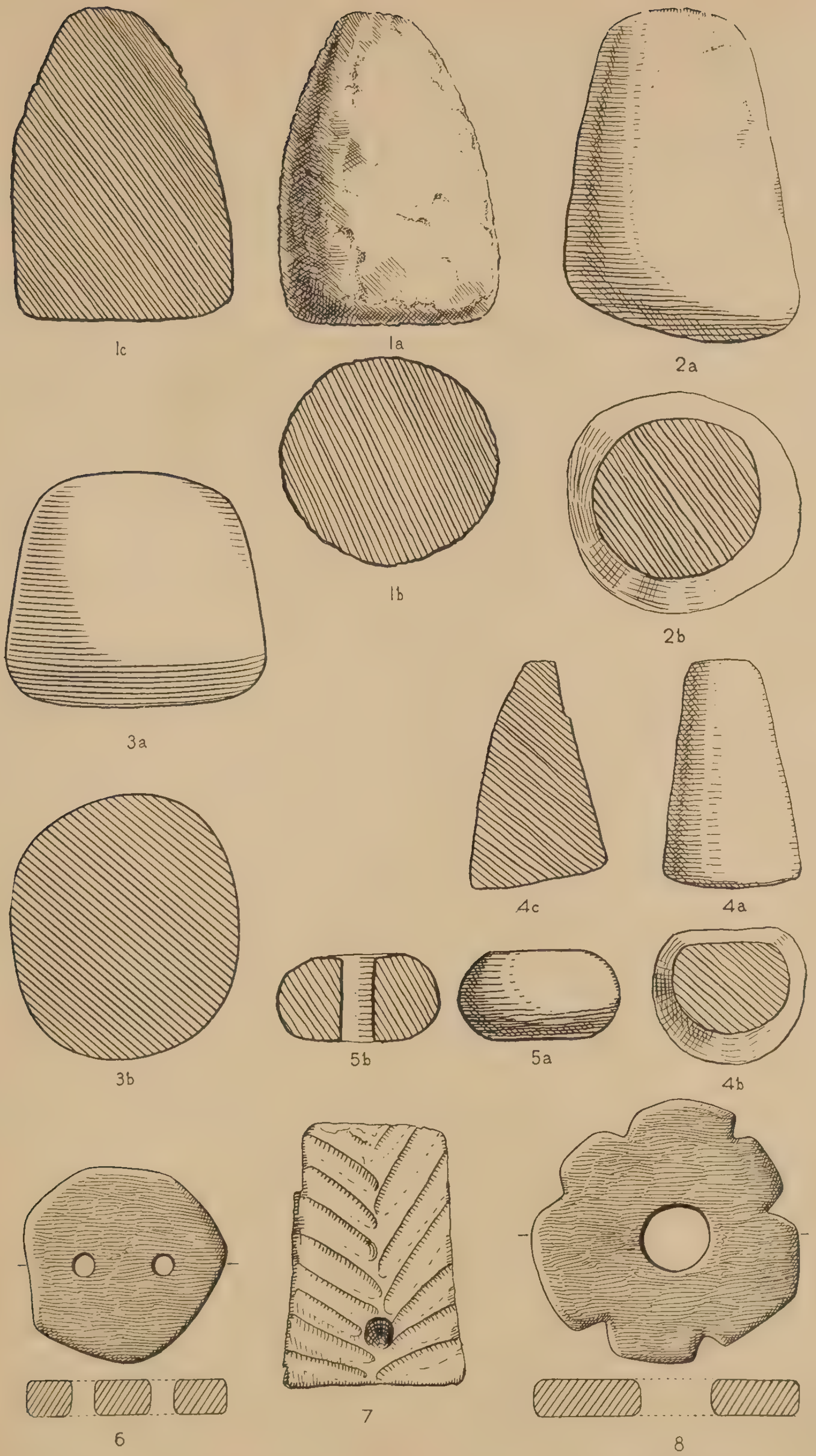
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Fig 23. Stone pounders and spindle-whorl, nos. 1–5; terracotta discs and spit-support, nos. 6-8 ($\frac{2}{3}$)

the neat little object, no. 4 on the same figure, from the surface half-metre. This is of green igneous rock, and brilliantly polished on the sides.

The short, broad pounder, fig. 23, no. 3, was found while cleaning the walls of area V in the stage transitional between B and C: a conical pounder, 0·16 m. high, comes from the early strata of period B. These two are the only ones which are not definitely later than B.

vii. *Idols.*

Fig. 11, nos. 5 and 7 (pl. VI, 9*b*) obviously represent a well-known class of primitive figurine with a projection for the head, and a body more or less rounded at the base;[1] fig. 11, no. 6 (pl. VI, 10), is linked to the same class by intermediate forms.[2] Its distribution is too familiar to need discussion here. Bittel believes the centre of diffusion to have been the Cyclades:[3] a more direct connexion between these islands and Kusura may be provided by a marble fragment shaped like a human foot, which, if the material proves to be the right kind, might have been part of a Cycladic statuette.

Fig. 11, no. 5. Ht., 0·06 m. The tip of the projection which indicates the head is missing. The figure is very thin, the surface well ground, and the edges beautifully finished. Material, white marble. Unstratified.

Fig. 11, no. 6. Ht., 0·051 m. The head is chipped at one side, and there is another chip on the base. A high polish renders the surface lustrous. Material, smooth black igneous rock. Period B.

Fig. 11, no. 7. Ht., 0·024 m.; material, white marble. Period B, early.

A fragment not dissimilar to the last in profile, and also of marble, but larger, was found in the strata of Period C.

viii. *Seal.*

One seal, pl. VI, 9*a*, fig. 12, no. 18, is of stone. Length, 0·03 m.; ht., 0·007 m. Colour, greyish yellow; material, unidentified stone. The pattern of the stamp is common, but the spiral decoration on the upper side unusual. The handle is partly made by a groove in the upper surface, and only projects slightly. Period C.

ix. *Pendants.*

Fig. 12, no. 26, is a marble pendant from the low strata of B; fig. 12, no. 23, of fine-textured grey-green limestone (?),[4] very thin, is from the middle strata. Compare *A.H.* i, 66, fig. 78, b 960, 902 (Alişar I), and 171, fig. 219 (Alişar II).

x. *Oblong 'Whetstones' and 'Pendants'.*

The close relation between the two pendants just described and the slightly thicker and longer bored oblongs often called whetstones is well illustrated in fig. 12. Nos. 28 and 29 are typical, made of smooth green limestone (?), with their holes bored from both sides. Both come from period C, as does the only other complete example, while periods B and

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[1] Bittel, *P.F.K.* 36, 37; Evans, *P. of M.* i, 45 ff.; *J.R.A.I.* xxx, 251 ff.

[2] e.g. *P.F.K.* pl. XVI, 14, IX, 7.

[3] *Ibid.* 37.

[4] This example has not been tested, but a similar fragment proves to be limestone.

A each produced a broken specimen. To period C belongs the tapering stone of similar material, no. 25. This has a stronger claim to be a whetstone than the rest, concerning the function of which there is still considerable doubt. For their distribution in western Anatolia, see *Thermi*, 192, 193; at Alişar they begin in III and continue in II,[1] which is now recognized as starting later than III.[2]

Fig. 12, no. 22, of the same material and date as no 28, is peculiar. It is irregularly perforated, and has a depression at the base. There are counterparts in Alişar II, though these are bored in the normal way and roughly square in section. It is suggested that the depression was for polishing the ends of other objects.[3]

xi. '*Pawns' or 'Counters'*.

These are usually conical like fig. 12, no. 15, though variant forms are not unknown. They are made of limestone, volcanic rock, and the like, and are confined to the strata of periods B and C. Cf. *Thermi*, 195. A tiny truncated cone of white marble? resembles the terracotta ones (fig. 12, no. 13). Period C.

xii. *Miscellaneous Small Objects.*

Fig. 23, no. 5, which looks like a spindle-whorl, is of smooth, hard, black rock. Stones of various colours were used for beads (fig. 12, nos. 1-6) at all periods, though never freely: no. 5 is a rare form.

Fig. 12, no. 11 is an object of white stone, shaped like a peg, from period C. Two or three bluntly pointed calcite 'borers' were identified, also from period C.

xiii. *Vessels.*

A tripod bowl, pl. VI, 11, diam. 0·185 m., ht. 0·08 m., was discovered in the surface half-metre: a more finished bowl, supported on four high feet, has been purchased in the village by the director of the Afyon museum, and comes presumably from the site. The modern peasants use stone basins for grinding corn, and the ancient inhabitants may have done likewise. The deposits of periods B and A yielded some primitive receptacles made from hollowing a depression on the surface of a stone: one of these little vessels is no. 27 on fig. 12; the others, larger, flatter, and less regular, are not illustrated.

xiv. *Querns.*

Saddle-querns of the usual type are rare in period C; and have not yet been detected in the lower strata.

BONE

One's first impression of the bone implements is that they are unconventional, since only a few of the types can be exactly paralleled elsewhere, and some forms usually found in prehistoric settlements are absent. Yet, in studying the bone objects from any site, one realizes that such things are more subject to local variation than almost any other class of utensil: for instance, though many primitive communities used flat blades, various pins, and broad or narrow needles for threading, the exact shape of the blade, pin, or needle seems to have been but little influenced by the types favoured in other districts. And this, in a material so little valued, so easily trimmed, is only natural.

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[1] *A.H.* i, 209, and 167, 168, fig. 212, b 1501, 776.

[2] *P.F.K.* 13, 14.

[3] *Op. cit.* 168, 169, fig. 214.

The classification of bone tools is never easy: one is handicapped first by ignorance of their exact function and secondly by the way in which certain types merge into each other. In this section of the report, letters refer to periods, arabic numbers to the quantity of examples found: e.g. C, 2 = period C, two examples.

1. Fig. 24, no. 17. Pointed implements with round, hollow handle (C, 2). Why should there be so few of these? Contrast their distribution at Thermi, and at Alişar, where, however, the joint is retained and serves as a handle (*Thermi*, 197-8, types 1, 2; *A.H.* i, 69, fig 83, 176).

2. Fig. 24, no. 28. Short, pointed implements from split bone: (*a*) with the handle-end imperfectly finished (B, 2; C, 3), and (*b*) with the handle-end well trimmed (A, 1; B, 3; all early).

3. Fig. 24, no. 20. Curved, flat blade, made from split bone, the edge carefully trimmed (C, 1).

4. Fig. 24, nos. 18, 24. Straight, flat, pointed implements, made from split bone, with well-trimmed edge (B, 2). These vary into type 5, certain examples being intermediate.

5. Fig. 24, nos. 16, 19. Pointed implements, with or without joint as handle, thicker in section than type 4, and more definitely rounded towards the point (B, 5; C, 5). These tools in their turn vary into the pins, type 8: there is one intermediate example from A, there are three from B, and three or more from C.

6. Fig. 24, no. 10. Pointed implements with round, solid section which may be square at the handle-end: (*a*) the handle-end imperfectly trimmed (B, 1; C, 1); and (*b*) the handle-end well finished (A, 3; B, 6; C, 4). There are several uncertain, broken examples (A, 3; B, 6; C, 3). These implements are usually thicker and stronger than the plain pins found on so many prehistoric sites.

6 *a*. Fig. 24, no. 8. This short point, cut at one end, and with a carved, off-set tip at the other, cannot, of course, be a spindle like *A.H.* i, 70, fig. 84, b 504, to which it has a superficial resemblance (C, 1).

7 Fig. 24, no. 21. Solid, pointed implements, the joint of the bone used as a handle (A, 2; B, 3; all early).

8. Fig. 24, nos. 23, 25. Pins, the joint of the bone serving as the head (C, 2; one possible short variant from the early stages of B). A common form: for discussion and parallels, see *Thermi*, 199, type 9; add *A.H.* i, 176, fig. 228, b 2380, from Alişar II. Fig. 24, no. 9 is broken at the tip.

9. Fig. 24, no. 22. Pin, with carved, round head (C, 1).

10. As 8, but pierced, a 'needle' (B, 1).

11. Fig. 24, no. 11. Thin, flat implement, pierced for threading (B, 1, early).

12. Fig. 24, no. 29. Single-ended drills (B, 2, early).

13. Fig. 24, nos. 26, 27, 30. Double-ended drills (B, 2; C, 2). No. 27, a variant of this type, is thickened towards one end like a metal drill (C, 1). Compare *A.H.* i, 177, fig. 229, b 2520, 2310, 1816, from Alişar II; 210, fig. 274, a 537, from Alişar III.

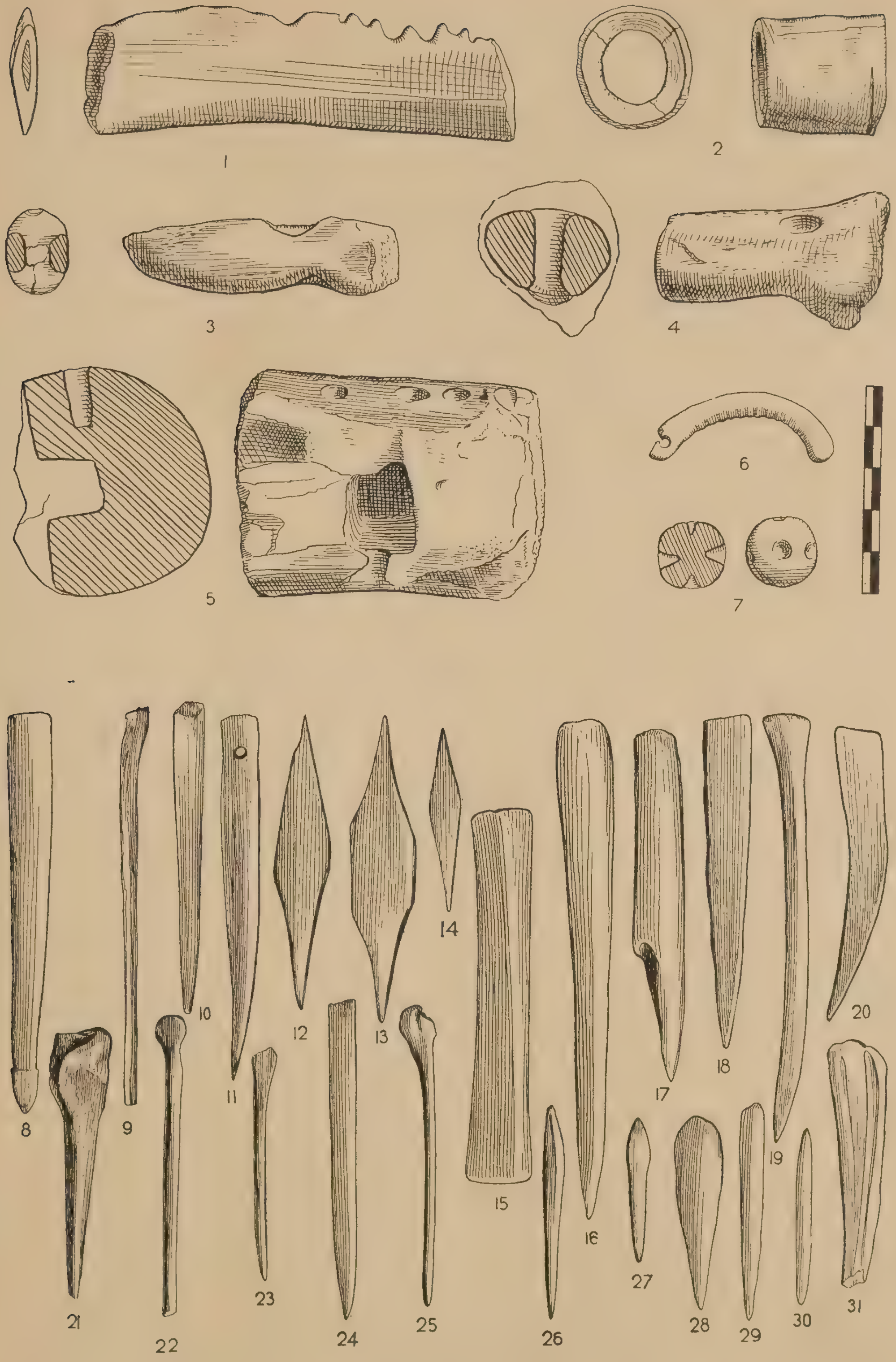
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Fig. 24. Bone implements

14. Fig. 24, nos. 12–14. Flat, diamond-shaped implements, smooth at both sides, with two points (B, 2, early; C, 1).

15. Fig. 24, no. 15. Long tubes made from a hollow bone trimmed at the ends (B, 1; C, 1: the example from B was found in the late deposit at 95·09 m., the example from C is very early, so that the two tubes cannot be far removed from each other in date). For discussion and parallels, see *Thermi*, 200, type 14; add *A.H.* i, 174, fig. 224, from Alişar II, and 210, fig. 274, a 904, 1030, from Alişar III.

16. Fig. 24, no. 2. Short tube, an incised line near one end (C, 1).

17. Trimmed goats' horns (B, 1; C, 1). One of these is notched near the tip of the horns, and partly sawn off, partly broken, at the other end.

18. Fig. 24, no. 31. Spoon or spatula, with a definite hollow on the reverse (A, 1).

19. Fig. 24, nos. 3, 4. Hammers, possibly for crushing corn. Three specimens: nos. 3 and 4, completely bored, are from the early strata of B, and a small, partially bored hammer comes from the later strata of B. Contrast *Thermi*, 200, type 16.

20. Fig. 24, no. 5. Handle? Length, 0·07 m.; diam., 0·05 m. One hole pierces the object through the centre: there are three other holes. The ends are trimmed roughly (C). What was mounted in the hole is uncertain, nor can I find any parallel.

21. Fig. 24, no. 1. Comb, one end broken, the teeth polished (B).

22. Fig. 24, no. 6. Pierced ornament? (B). Contrast the ornaments made from claws, also pierced at one end, from various settlements.

23. Fig. 12, no. 20; pl. vi, 9 *b*. One seal is made of bone; ht. 0·015 m., diam. 0·013 × 0·01 m. From B; V, 93·5–93·25 m. This has a counterpart in terracotta (p. 30).

24. Miscellaneous objects. Half a sphere, pierced so that it resembles a spindle-whorl, with a straight base cut but not trimmed. From a femur-head (C). Compare *A.H.* i, 178, fig. 232, b 722, discussed on p. 179. One small spherical object (C), and another, fig. 24, no. 7, decorated with punctures (C). The latter recalls the terracotta sphere, fig. 12, no. 9. A carefully finished but unpierced oblong, length 0·02 m. (B). Two pawns or counters like fig. 12, nos. 12–14 (C).

Glass

From the top stratum comes a white glass bead, in shape a spheroid flattened at the two ends. Ht., 0·005 m.; diam., 0·006 m. For 'glazed frit' in Alişar II, cf. *A.H.* i, 179, 181; for the earliest glass beads, cf. Harden, *Antiquity*, Dec. 1933, 419, 420.

The Cemetery

By J. R. Stewart, *Esq., M.A.*

While we were excavating at Kusura in the summer of 1936, the cemetery which is the subject of this report[1] was found in front of the building occupied by the expedition.

Pl. 1 shows the position of the cemetery. Seen from the mound, it appears as a sharp ridge, the most prominent piece of high ground at that time in the vicinity.

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[1] No detailed comparative study of early burials in the Aegean has been attempted, as out of place in this context; nor has it yet been possible to make or obtain an anthropological report on the skeletal remains from Kusura, though this will be undertaken as soon as possible.

From the north the land is seen, not as a ridge, but as the culmination of a gentle rise from the south, broken at this point by the erosive action of a mountain stream.

The extent of the cemetery is not yet defined, but there are indications that it is of some size. Pl. IX, 1 and fig. 25 show the extent of the excavated portion.

The archaeological data of the graves and pottery will be found in the registers at the end of the paper, and any detailed statement here is unnecessary. It is to be regretted that the disturbed nature of the ground did not permit us to determine the character of the actual graves, but the usual longish pit would appear to have been used.

The orientation of the graves is roughly east–west. The average error in alignment is just over 16° and, with the exception of Grave 13, the error is invariably to the south. It is noteworthy that, although there is a variation of from 28° to 6°, the large majority of the graves fall within 6° of the mean. The corrected readings for orientation at Baba Köy in Mysia[1] are not to hand, but it seems that at that site there was not a constant trend of error. It would be unsafe to found any generalization on the small number of graves excavated, but in all cases where determination was possible the bodies were laid with the heads to the west, as appears to be general in the early cist and pithos tombs in Greece. This is in sharp contradistinction to the Yortan type cemetery of Baba Köy in Mysia, where all pithoi lay with the mouth to the east, and in the only intact grave the body was laid with the head to the east.[2] The type of grave at Kusura is far from uniform. The pithos graves fall into three main classes :—

1. True pithos burial in which the body is placed inside a pithos, the mouth being crudely sealed with large sherds in some cases (Graves 1, 6, 7, 13).
2. Pseudo-pithos burial in which the body is covered by the two sections of a pithos longitudinally bisected, placed mouth to mouth (Graves 3, 8, 11).
3. Sherd burial, in which the body is laid on a large fragment and then covered with a broken jar or jars (Grave 12).

This variable type is well in accord with the practice of pithos burial in Greece; the Yortan grave-fields stand alone in their rigid attachment to an accepted convention.

In addition, Graves 2, 4, and 5 are cist-graves, well built of large stone slabs. Grave 14 is an open pit-grave.

The attitude of burial is surprisingly regular, and should emphasize the fact that, in dealing with burials, it is the attention paid to the arrangement of the body which is of importance for future research rather than the type of the grave. At Kusura, full data were available to the excavators for Graves 3, 5, 6, 8, and 14 only, and, of these, all but no. 8 contained skeletons crouched on the right side, the exception being crouched on the left. The general attitude was with the knees drawn about half-way up, and, in the case of Grave 14, the hands appeared to have been placed together in front of the face. Unfortunately, as the plate shows, the action of the lime in the soil has made detailed observations impossible.

No explanation is offered of the position in the remains in Cist-grave 2, but the possibility of fractional burial should be borne in mind. Since one pot in this grave

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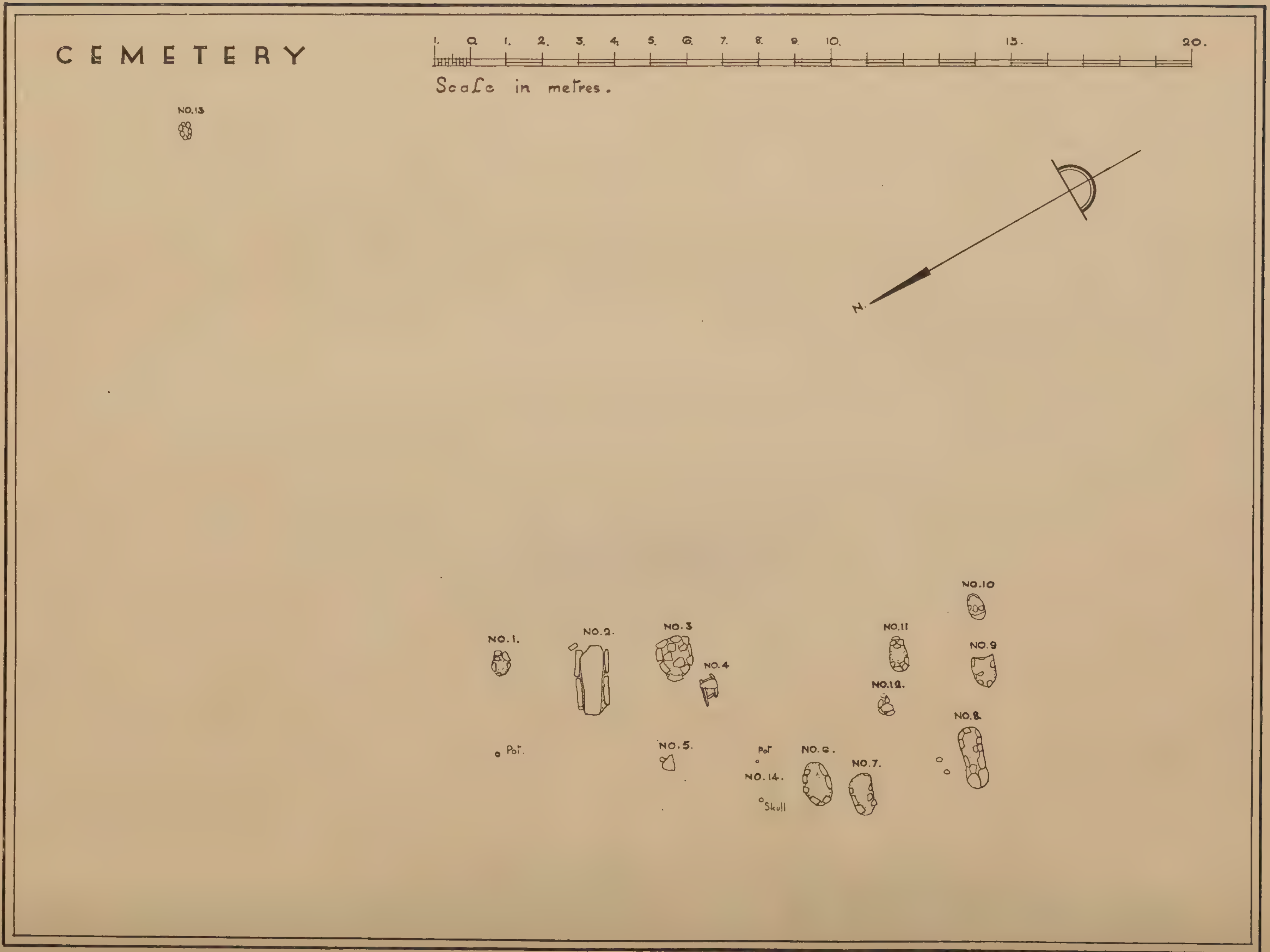
[1] Publication in progress.

[2] This is not intended to make a claim that all Mysian bodies were laid with the heads to the east. The Baba Köy evidence is less conclusive than that from Kusura, as regards quantity.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Pot
NO.6.
NO.7.
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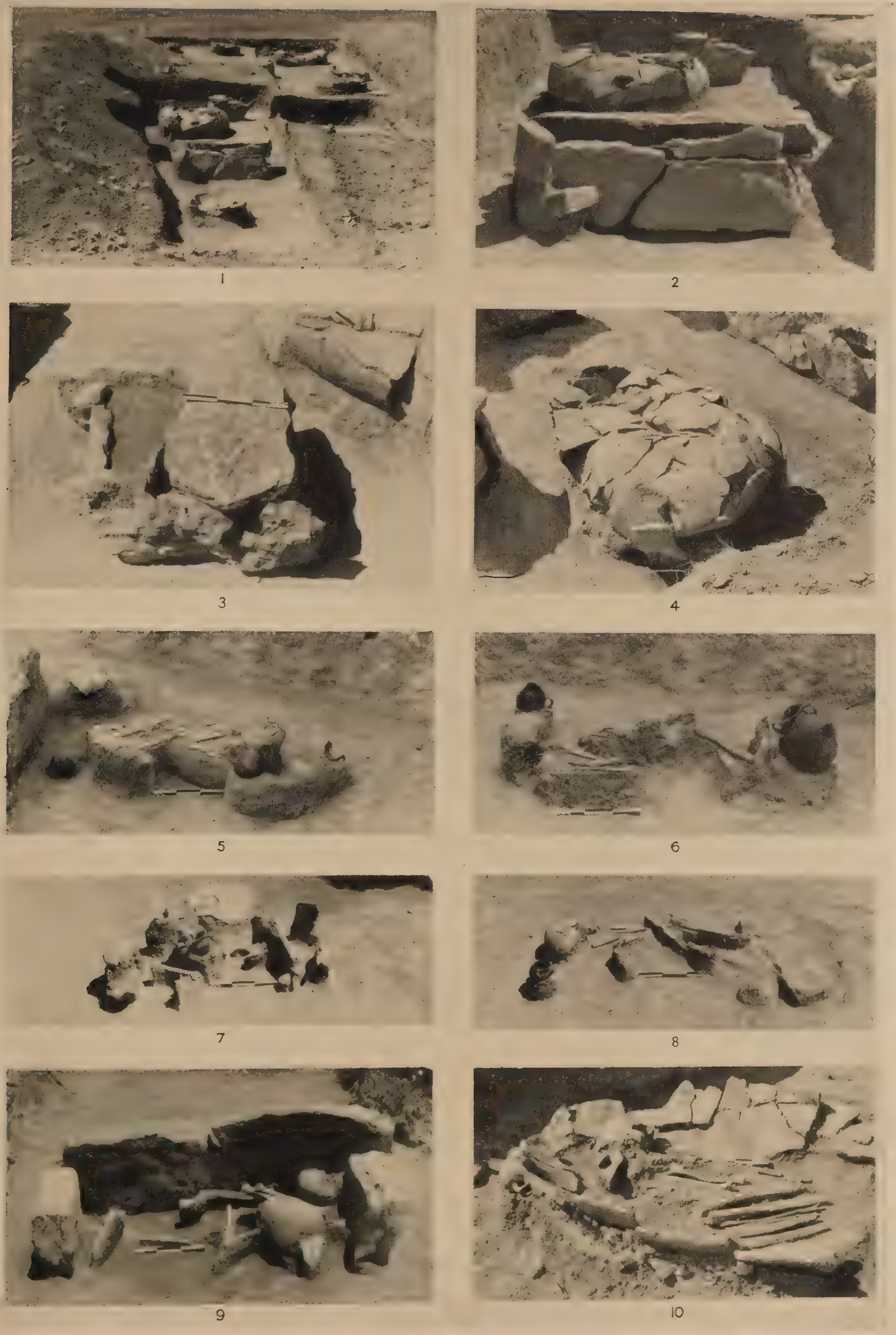
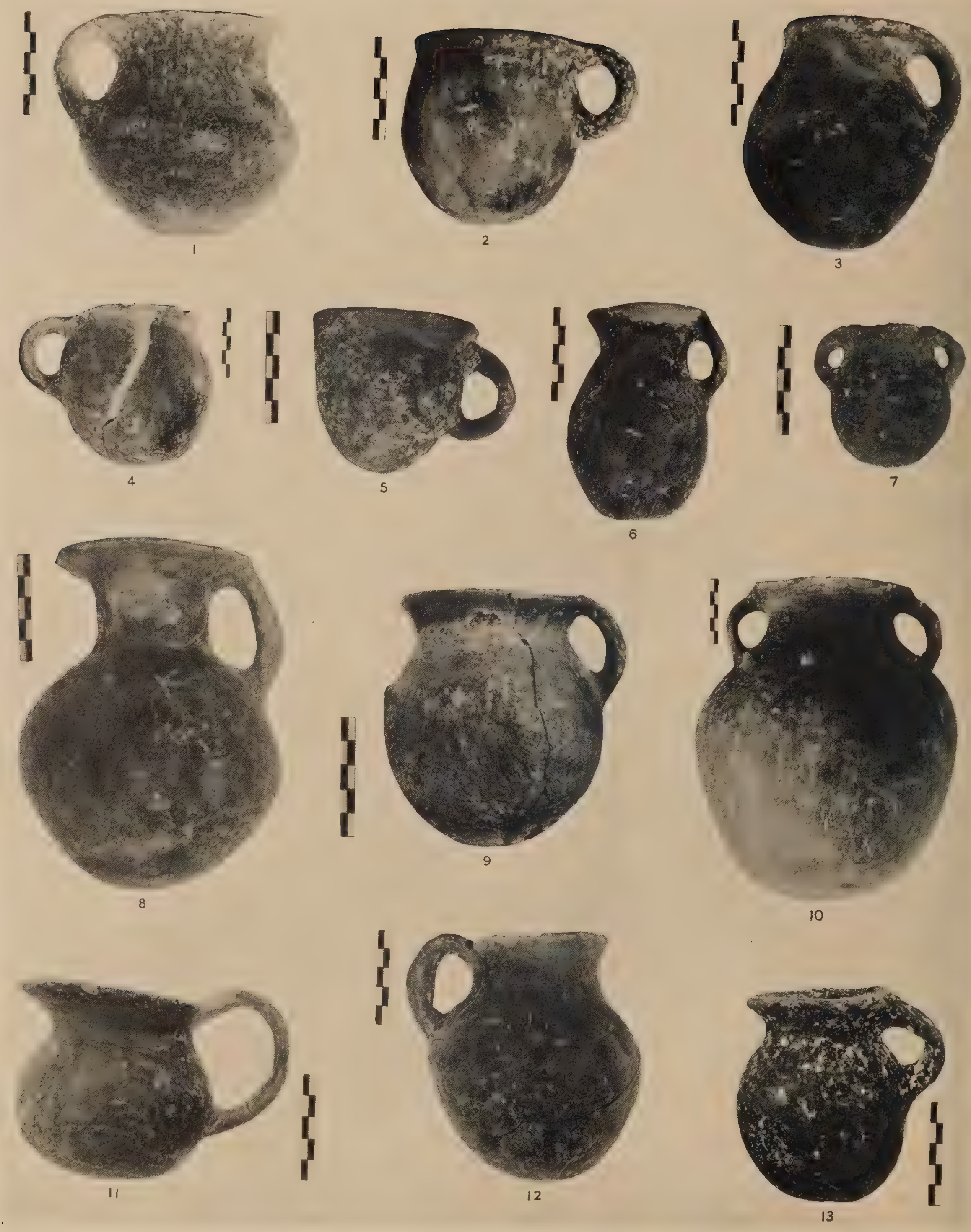
Skull

Fig. 25. Plan of the cemetery



1 The cemetery, general view. 2. Grave 2. 3. Grave 4. 4. Grave 3. 5. Grave 5. 6. Grave 14. 7. Grave 3. 8. Grave 8. 9. Grave 2. 10. Grave 6

Published by the Society of Antiquaries of London, 1937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Vases from the cemetery

Published by the Society of Antiquaries of London, 1937

was too fragmentary for reconstruction, the cist may have been opened in antiquity, though the capstone was found in place.

Grave 3 calls for little comment. The occurrence of two large domestic pots on the outside (top) at the base is notable, as they must have been placed on the pithos after burial, perhaps as an offering to the dead.[1]

Grave 5 is a good example of the re-use of a tomb. The cist had been destroyed before excavation, but the position of the lower skeleton shows that it was the original owner of the grave. A thin layer of soil, of the same character as the surrounding earth, had filtered in by the time that the upper corpse was buried.

Grave 6, like Grave 3, produced a pot outside the pithos, also at the base.

The placing of the body in Grave 8 on a mud-brick platform under the two halves of a pithos is interesting, but not unknown elsewhere.[2] It is the sole example of a prepared 'bed' at Kusura.

Graves 12 and 13 were certainly infant burials, and perhaps also Grave 10. They are unfortunately too mutilated by the plough and by the bone-dissolving lime[3] to offer any points worthy of record.

Grave 14 is the most satisfactory in the series, the bones being unusually well preserved. There was no trace of a cist.

The grave-goods, as is so often the case, were poor. Nothing except pottery was found. Pl. IX, 5–10 show the position of pots in individual graves, only the tendency to place pots behind the head (in graves 5 upper, 5 lower, 6, 8, 14) being specially characteristic.

The pots themselves are monotonous (pl. x). The paste is usually coarsely levigated with a great quantity of grit on straw *dégraissant*. The firing is poor, very uneven, leaving a grey to black colour in the paste. The surface finish is finger-smoothed or polished. Decoration is confined to the use of small plastic bosses, singly, in pairs, or in bands round the shoulder. The shapes are restricted to two main types with slight variations[4] which are noted as cups and jugs, and the three unique forms, the large amphora of Grave 14, the small two-handled jar of Grave 11, and the incomplete bowl of Grave 7. None of the vase-forms is as yet common in the settlement. A disc from Grave 12 is the forerunner of a long series lasting until after the fire which burnt the great wall in area I (p. 11).

In the one case in which stratified burials occur (Grave 5), there is no fundamental difference in the two sets of grave-groups.

Two pots, pl. x, 9 and 13, have had holes made in the base before burial, in acceptance of the widely spread primitive belief that the dead pot could accompany its owner to the afterworld.

The pithoi, with which are included the exterior pots of Grave 3, show a much greater variation in form than the small vases, and are generally of a somewhat better quality, though the firing is usually rather poor. The shapes are well developed and massive (figs. 26, 27). The handles (oval section) are placed horizontally or vertically and often asymmetrically. Bases are usually egg-shaped, but Pithos I (fig. 26, no. 6) has a flat base, cut off sharply at right angles to the side. A noticeable feature is the slight incurved interruption of the contour of the lower portion of many examples—perhaps an aid to 'setting'.

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[1] For this practice in Greece during the Middle Helladic times see Blegen and Wace in *Symbolae Osloenses*, ix, 1930, 33 ff.

[2] Alişar. *A.H.* i, 181 ff. The period represented (Alişar II) is later.

[3] The character of the soil in this locality is prejudicial to the survival of skeletal remains.

[4] *Cups.* Pl. x, 2, 4, 5; also Grave 5, lower, not catalogued.
Jugs. Pl. x, 1, 3, 6, 8, 9, 11, 13; also two pots found in trenching, one pl. x, 12.

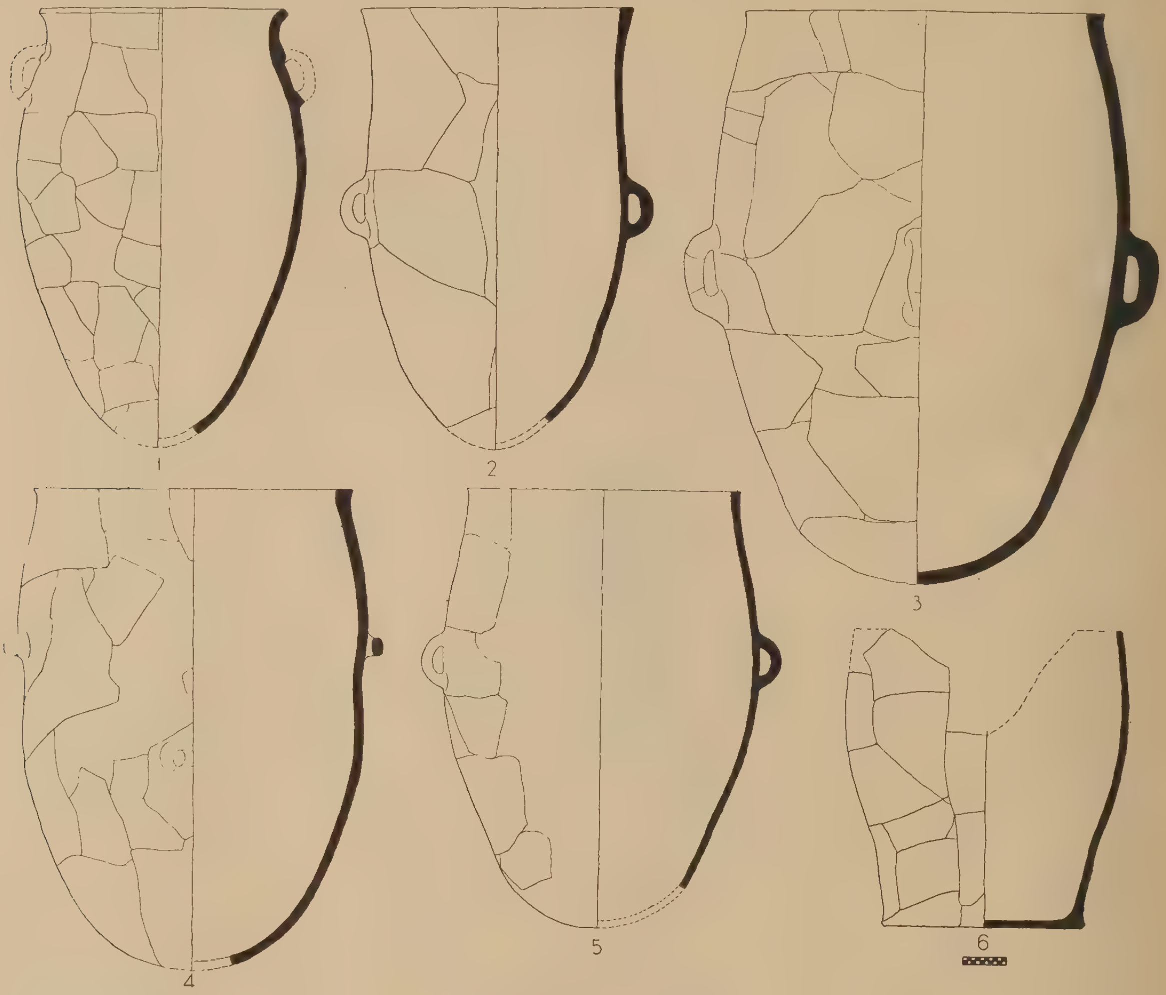

Fig. 26. Pithoi from the cemetery: 1, Grave 7; 2, Grave 9; 3, Grave 3; 4, Grave 8; 5, Grave 6; 6, Grave 1

So far, the pottery from the cemetery is not well represented on the settlement mound. Neither shapes nor fabric occur in the latest culture (C), of which the characteristics are now well known; nor is there any parallel in what may be called the middle period at Kusura (B). However, a vase from the lower levels (A) of the site is somewhat similar in shape and also in fabric to our cups, and other connexions are summarized by Miss Lamb on p. 16. On these grounds we would attribute the cemetery to period A,[1] though further excavation will be necessary to fix the exact chronological stage within this limit.

The evidence of the pottery itself is of no certain help, beyond making the attribution to the early period reasonable. The pottery lacks the range of shape and decoration and quality of the latest Kusura wares, and of the 'Ahlatlibel'[2] and 'Ormerod'[3] wares of the middle period. It offers no comparison to the black wares of the Troad and of the Yortan group.

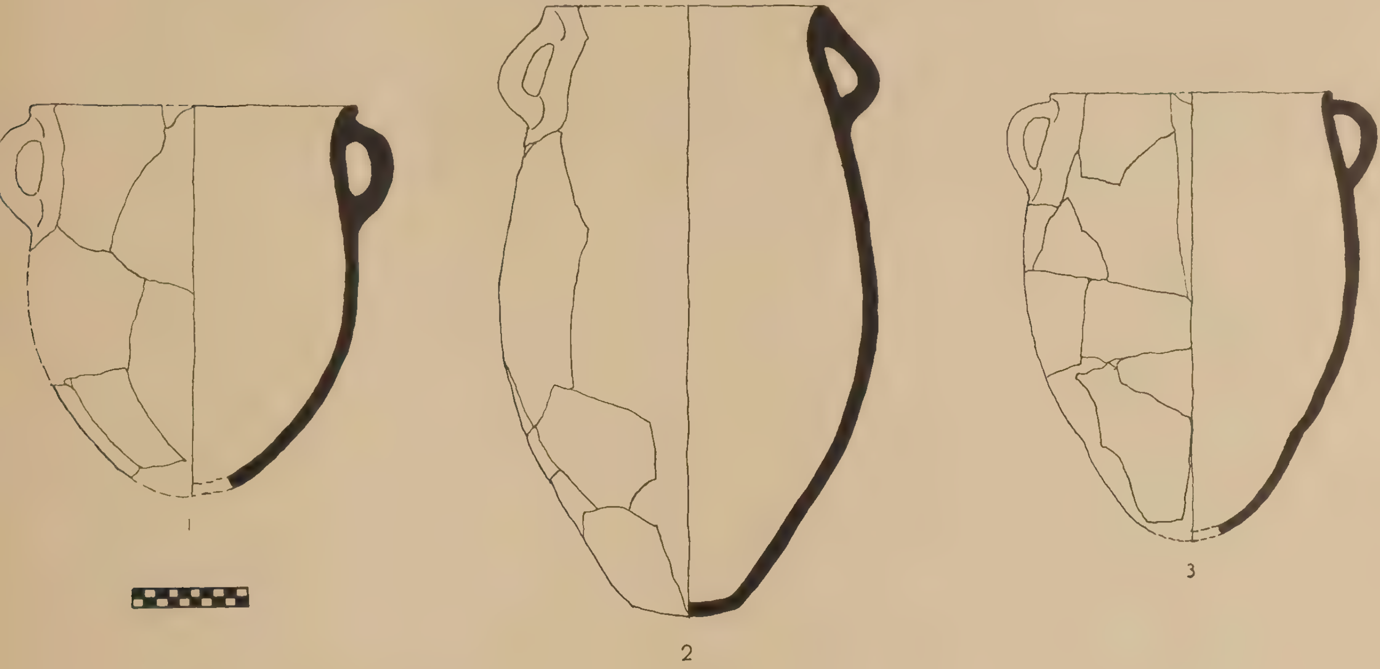

Fig. 27. Pithoi from the cemetery: 1, pot above Grave 3; 2, Grave 10; 3, Grave 13

The amphora, pl. x, 10, is of some interest in this connexion. Though the use of knobs as a decorative element is found not only at Kusura (cemetery), but also in the pottery of Troy I and II, Yortan, Pitane (Çandarli), Baba Köy, and Alişar (I), our specimen with its band of six conical bosses is only paralleled in Asia Minor by a single pot from Yortan.[4] This decorative tradition is known at Megiddo[5] (stages IV-VII = chalcolithic to opening of the E. B. I) and in Egypt. In the Ashmolean Museum there is a large pithos of the Spanish El Argar culture, which is very similar in type. No chronological deduction should be drawn from these comparisons, and it is not suggested that there is any connexion. They are noted in this context to demonstrate that elsewhere outside Anatolia this decorative form is relatively early.

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[1] The date suggested for the beginning of period A is the close of the fourth millennium (p. 4).

[2] P. 16, note 1. See also p. 21.

[3] P. 21, note 1.

[4] *Brit. Mus. Cat. Vases*, i, 1, A 35, Yortan. Seven knobs and another at the base of the handle. I owe this reference to Miss Lamb.

[5] Engberg and Shipton, *Notes on the Chalcolithic and Early Bronze Age Pottery of Megiddo*. The treatment at Megiddo is much more compact than at Kusura, and is confined to bowls and bowl compounds. There is no reason to suppose that the motive at Kusura was derived from a stone prototype, as it is a logical expansion of an existing idea.

The form of burial is equally indecisive. Mixed types of interment occur commonly, not only in Early Minoan Crete and the Middle Helladic mainland,[1] but also in Asia Minor at the Alişar Hüyük.[2] Urn burials alone are frequent in Anatolia, and cist graves also, so that no conclusions can be drawn from a study of the grave-types.

The custom of covering the corpse with a pithos cut in half, the halves laid mouth to mouth, is paralleled at Alişar (II), but there jars were utilized undivided, sometimes as many as three being telescoped together; it is demonstrable that Alişar II is in part contemporary with the top levels at Kusura, very much later than the cemetery.

The importance of the cemetery at Kusura lies in its being a link between the east and west Anatolian cultures, not culturally but geographically. It helps to show, with the few scattered graves of Alişar I, that pithos burial as a custom had very early origins in Asia Minor, but it also should act as a warning that burial, or rather grave, types are not always safe criteria for dating. Here pithos, cist, and open-grave burial exist, all certainly contemporary, while at Alişar terracotta cists were employed as well as stone ones.

The form of the pithos burials is not without its economic interest. At Kusura, when a body was too long for a single pithos, that pithos was halved longitudinally so that it would cover the body by the two portions being placed mouth to mouth. In one case at least there is evidence that already broken pithoi were used. This would seem to indicate that pithoi were objects of some value, not to be lightly cast away while still usable.[3]

The use of an extra-mural burial-ground at this early period is important. Burials at Alişar were made in the town, though the evidence for funerary practices during Alişar I and III is somewhat disappointing. The Yortan people, probably later than period A at Kusura, were also using clearly defined burial-grounds, but at Ahlatlibel[4] burial seems to have taken place in the houses, as at Bogazköy.

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[1] Blegen and Wace, *op. cit.*, 31, and for further references, Goldman, *Eutresis*, 221–6.

[2] *A.H.* i, *loc. cit.*

[3] Miss Lamb has observed that in Lesbos a local potter considered a pithos to be the most difficult form to execute.

[4] *Türk Tarih*, ii, 88 ff.

Grave-Register

Number of Grave	*Type*	*Orientation*	*Burial*	*Pottery*	*Comments*
1.	Pithos. Surviving length, 0·75 m.; width, 0.53 m.	Mouth, 0·28° N. of W.	No skeletal remains.		
2. Pl. IX, 2, 9.	Cist. Single, long capstone. Sides in two pieces, built up to required level. Single end stones, with packing to required level. Length (top of capstone), 1·63 m.; width, 0·85 m.	At east end, 22° S. of E.	Inhumation. Very confused. Possibly two individuals. One skull, in N.E. corner of cist, lay on its side, base to north wall, face to east, with bones round it.	(*a*) Large pot, shape uncertain. (*b*) Carinated jug, pl. X, 1.	The cup-jug lay on its side, beneath a large sherd of (*a*).
3. Pl. IX, 4, 7.	Pithos. Length, 1·4 m.; width, 1·12 m. over handles.	Mouth, 18° S. of E.	Inhumation, crouched on right side. Head to west, face to south (?). Length of skeleton as found, 1·03 m.; width over shoulders 0·52 m.	(*a*) Jug, pl. X, 11. (*b*) Small jar (?). (*c*) Coarse pot, uncertain shape.	At the west end, on top of the pithos, were remains of a smaller pithos, and another pot oriented like the body.
4. Pl. IX, 3.	Cist made of two large side-stones, not set squarely. A large stone at each end. Length, 0·80 m.; width, 0·63 m. (capstone).	At east end, 13° S. of E.	No skeletal remains.	Jug, pl. X, 3.	Only one cover-stone, at the east end, was in position.
5. (upper) Pl. IX, 5.	Cist, very fragmentary. Length, 1·4 m.; width, 0·73 m.	At east end, 11° S. of E.	Inhumation, contracted on right side, legs doubled back. Head to west, face to south. Length of body as found, 0·77 m.	(*a*) Jug, pl. X, 8. (*b*) Jug, pl. X, 6.	Both pots behind the skull.
5. (lower)	As above.	As above.	Inhumation, position uncertain, probably as above. Head to west.	(*a*) Jug, pl. X, 13. (*b*) Cup, very fragmentary.	Separated from 5 upper by stratum of earth.
6. Pl. IX, 10.	Pithos, badly broken. Greatest surviving length, 1·02 m.; width, 0·76 m.	Mouth, 15° S. of E.	Inhumation, contracted on right side. Head to base of pithos, i.e. to west, face to south.	(*a*) Cup, pl. X, 5. (*b*) Cup, pl. X, 2.	(*a*) Lay behind skull; (*b*) outside base of pithos.

Number of Grave	*Type*	*Orientation*	*Burial*	*Pottery*	*Comments*
7.	Pithos. Greatest surviving length, 1·1 m.; width, 0·62 m.	Mouth, 23° N. of W.	Inhumation. Poor preservation.	(*a*) Sherd: rim and handle. (*b*) Sherd of bowl.	Sherds also found in the filling above grave.
8. Pl. IX, 8.	Pithos. This has been bisected longitudinally and the two 'halves' placed mouth to mouth over the body. Length of pithos, 1·15 m.; width, 0·64 m. Total length of the two pieces, 1·68 m.	Mouth, 17° S. of E.	Inhumation, contracted on left side with legs drawn up, hands to face. Head to west, face to north. Whole body laid on a mud-brick platform. Length of body as found, 0·88 m.; width over pelvis, 0·40 m. Platform, 1·21 × 0·60 m.	(*a*) Jug, pl. X, 9.	The vase was placed behind the skull.
9.	Pithos, very fragmentary. The mouth closed by the remains of another pithos. Total length, 1·08 m.; length of pithos, 0·96 m.; width, 0·65 m.	Mouth, 15° S. of E.	Inhumation, Head to west.		
10.	Pithos. Greatest surviving length, 0·77 m.; width, 0·47 m.	Mouth, 11° N. of W.			
11.	Pithos, very fragmentary. Length, 1·02 m.; width, 0·50 m.	Mouth, 18° 30′ S. of E.	Inhumation, head to west.	Two-handled jar, pl. X, 7.	
12.	Pithos. The position could not be determined, but it seems probable that the body was laid on a large sherd and a broken barrel-shaped pithos inverted over it. Length, 0·57 m.; width, 0·36 m.	Mouth, 15° S. of E.	Inhumation. Only fragments of infant's skull remained, head to west.	Disc.	The disc lay to east of skull: no data to determine whether this was behind the skull.
13.	Pithos. Surviving length, 0·38 m.; width, 0·42 m. over handles.	Mouth, 6° N. of E.	Inhumation, laid with head at mouth of pithos, to west.		

Number of Grave	*Type*	*Orientation*	*Burial*	*Pottery*	*Comments*
14. Pl. IX, 6.	Open grave.	19° 30′ S. of E.	Inhumation, contracted slightly on right side. The body was twisted so that the rear of the pelvis was uppermost. The upper trunk was crouched, with the hands drawn up before the face. Head west end, with the top uppermost, face to south. The legs were drawn up side by side with the lower bones bent back. Length of corpse in grave, 1·10 m.; stature, 1·30 m.; width, 0·44 m.	(*a*) Amphora, pl. x, 10. (*b*) Cup, pl. x, 4.	Cup behind the skull.

Description of the Vases on pl. x

The following account is compiled from the notes of J. Stewart and W. Lamb. All catalogued vases from the tombs are illustrated. Those too fragmentary to be reconstructed have not been catalogued; they have the same characteristics as those described below. Many vases seem to be finger-smoothed rather than polished, and the presence or absence of polish, produced by a pebble or otherwise, is often a matter for doubt. Some vases are described as 'smoothed horizontally' or 'vertically', because strokes, too dull in tone to be called polish, have been observed.

Pl. x, 1. Grey-black clay, containing much grit and straw. Mottled grey-black surface. Two plastic knobs. From Grave 2.

Pl. x, 2. Light grey-buff clay, coarsely levigated with straw and grit. Mottled surface. From Grave 6.

Pl. x, 3. Black clay, fairly well tempered with little grit. Black-brown surface. From Grave 4.

Pl. x, 4. Black clay, with very little grit. Brown-black mottled surface, red at rim; smoothed with vertical and horizontal strokes. From Grave 14.

Pl. x, 5. Dark-grey clay containing grit and straw. Dark-grey surface, lighter at base. Part of rim and handle missing. From Grave 6.

Pl. x, 6. Black clay, with a little grit and straw. Black surface, smoothed vertically. Lip chipped. Grave 5, upper.

Pl. x, 7. Clay as no. 1. Grey-black surface.[1] One handle restored. From Grave 11.

Pl. x, 8. Brown-black clay, finely tempered. Brown-black mottled surface, red at rim, slipped and polished diagonally and vertically. Lip chipped. From Grave 5, upper.

Pl. x, 9. Clay as no. 3. Grey-brown surface, pebble-polished horizontally. Two plastic knobs. Rim chipped. Ancient hole in base. From Grave 8.

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[1] So W. L.: J. S. considers that the surface shows traces of polish.

Pl. x, 10. Black clay, fine, with small pieces of grit and straw. Brownish-black surface, red at rim, polished on upper part, but not towards base. Six bosses. Patches of handle and rim restored. From Grave 14.

Pl. x, 11. Clay as no. 10. Black-brown surface, slipped and polished with horizontal and diagonal strokes. Part of handle restored. From Grave 3.

Pl. x, 12. Clay as no. 10. Brown-black surface, polished horizontally. From trench between Graves 1 and 2.

Pl. x, 13. Black clay, with much grit and straw. Black-brown surface smoothed horizontally. Ancient hole in base. From Grave 5, lower.

Description of the Pithoi in figs. 26, 27

The clay varies from grey to brown, though one jar is reddish buff in part, and one is red-brown inside and on rim, black outside. The amount of grit in the paste varies, and some examples contain straw. The surface is smooth, but neither slipped nor polished.

APPENDIX

Analyses of Metal

The following analyses have kindly been supplied by Professor Desch to whom I would like to express my warmest gratitude.

Concerning nos. 1–3, from period A, he reports: 'Those so far examined from other periods show more nickel and little or no arsenic, so seem to have a different source.' He adds that none of the specimens analysed proved to be true bronze.

No.	*Period*	*Copper*	*Tin*	*Arsenic*	*Nickel*	*Iron*
1	A	99·51	—	0·43	0·06	—
2	A	99·41	—	0·59	—	—
3	A	95·74	2·80	0·25	0·05	—
4	B	99·4	0·5	0·1	trace	—
5	B	97·2	1·2	trace	0·5	1·1
6	Transitional B–C	99·3	—	trace	trace	0·7
7	C	99·8	—	—	0·1	0·1
8	C	99·1	trace	trace	0·1	0·8
9	C	97·9	0·3	trace	0·4	1·4
10	C	99·0	0·2	0·1	0·3	0·4

No. 3 also contains 1·16 per cent. of lead.

The specimens in question were all small fragments. Their exact levels and descriptions are as follows:—

No. 1. Tip of pin. From II, 89·25–89 m.
No. 2. Tip of pin or drill. From II, 89·5 m.
No. 3. Oblong fragment. From II, 89·75 m.
No. 4. Fragment of toggle-pin. From V, 93·5–93·25 m.
No. 5. Fragment of pin or wire. From V, 94·65 m.
No. 6. Fragment of roll-headed pin. From I, 95·75–95·5 m.
No. 7. Fragment of pin. From VII, 104–103·5 m.
No. 8. Fragment of pin. From VI, 104–103·75 m.
No. 9. Fragment of pin. From VIII, 102·5–102·25 m.
No. 10. Fragment of pin or wire. From VI, 103·5–103·25 m.

II.—*The Astrolabe of Queen Elizabeth*

By R. T. Gunther, *Esq., M.A., Hon. LL.D.*

Read 12th November 1936

During the past summer a number of parts of ancient English astronomical instruments were found in the University Observatory at Oxford, during the refitting of certain rooms for the new programme of work of Professor Plaskett, the Savilian Professor of Astronomy. Professor Plaskett was kind enough to draw my attention to the find, and, on my expressing the opinion that it was of historic value, was gracious enough to present the instruments to the Oxford Museum of the History of Science in the Old Ashmolean.

The collection includes parts of a fine mural quadrant by Elias Allen of 7-foot radius, the limb of a 6-foot sextant, a 2-foot equatorial quadrant, and one or two indeterminate parts of seventeenth-century apparatus. But the most interesting piece of all is a large planispheric astrolabe made by Thomas Gemini in 1559 for Queen Elizabeth.

Before this recent discovery the existence of these instruments had been entirely forgotten in the University. I am certain that Professor Plaskett's predecessor, Professor H. H. Turner, could not have known of them, but there is evidence that his assistant, the late Mr. F. A. Bellamy, F.R.A.S., was aware that they were still extant. The Observatory, which is a comparatively modern building erected during the professorship of Charles Pritchard, may have received them when the ancient Astronomy Chamber, in the Tower of the Schools next the Bodleian, was transferred to the custody of the Keeper of the University Archives.

Three pieces at least, including the astrolabe, can be identified as being part of the great gift of instruments made to the University by Nicolas Greaves in 1659, an inventory of which was printed in the Bodleian *Catalogus Librorum Manuscriptorum* for 1697. Nicolas was a doctor of theology and a Fellow of All Souls College, but there is nothing to show that he had any interest in astronomy, other than that his elder brother, John Greaves, had occupied the Savilian Chair from 1643 to 1648, when he was evicted by the parliamentary commissioners. John died in 1652.[1]

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[1] The head of the branch of the family with which we are concerned was the Rev. John Greaves, who held the living of Colmore, Hants, and had been tutor to George Wither, the poet. The

The somewhat peculiar circumstances of the gift are inscribed on one side of the tablet of the astrolabe (fig. 1) and on three of the other instruments:—

> 1659. *Acad. Oxon. in usum praecipuè Prof. Savilianorum:*
> *Ex dono Nic. Greaves* S.T.D.
>
> *In memoriam* { *Tho. Bambridge* M.D.
> *Jo. Greaves* A.M. N. *fra:*[1] } *olim Astronomiae Prof: Savil.*

The instruments were not by any means new when given. The Allen quadrant, dated 1637, was 22 years old at the date of presentation, and the astrolabe, dated 1559, was already a centenarian. Neither could have been specially made for John Greaves as Savilian Professor. The inclusion of the name of his predecessor, Bainbridge (whose name was John, and not 'Thomas Bambridge'), suggests that he may have used them during his tenure of the Savilian Chair, 1619–43.

Oxford, having generously provided her Astronomy professor with a tower room as an observatory, evidently considered it to be the duty of the observer to furnish his own instruments. Her example was followed by Charles II when he provided his Astronomer Royal with Greenwich Observatory, but expected Flamsteed to find the instruments for observation out of his inadequate income of £100 a year. So it is not impossible that these old Oxford instruments may have been the private property of Bainbridge, and on his decease were passed on to John Greaves, on whose death they were inherited by his brother Nicolas, who, knowing their history, devised an appropriate inscription when he gave them to the University in 1659. And thus the Oxford Observatory came to possess first-rate equipment of its own for the first time.

In the inscriptions 'Tho. Bambridge' has been engraved in error for 'Joh. Bainbridge'. And the chapter-heading in the Bodleian Catalogue for 1697 was hardly less accurate if Nicolas Greaves was really the donor. It reads

> Instrumenta astronomica *Musei Saviliani* ex dono pleraque Johannis & Thomae Graeviorum fratrum scientia ac probitate persimilium et semper memorandorum.

---

possible existence of a son Nicolas is obscurely hinted in the Greaves pedigree in Nash's *Worcester*, i, 179, by the phrase 'four sons'. But the *Victoria County History of Hampshire* definitely restricts his progeny to three, namely, (1) John, *b.* 1602, traveller and astronomer, and our Savilian professor; (2) Edward, *b.* 1608, Fellow of All Souls and physician to Charles II; (3) Thomas, *b.* 1612, deputy professor of Arabic and Fellow of Corpus Christi College. Yet Nicolas was hardly less eminent. He matriculated at St. Mary Hall in February 1624–5, aged 19, and would therefore have come between John and Edward. He, too, became a Fellow of All Souls, in 1627, seven years before Edward. He was proctor in 1640, D.D. in 1643, rector of Tankersly, Yorks., 1634, and of Welwyn until ejected for non-conformity in 1662. John died in London 8th October 1652, when apparently his astronomical instruments passed to his brothers Nicholas and Thomas, who seven years later gave them to the University, from which they may never have been moved.

[1] Presumably a contraction for *Nicolai fratris.*

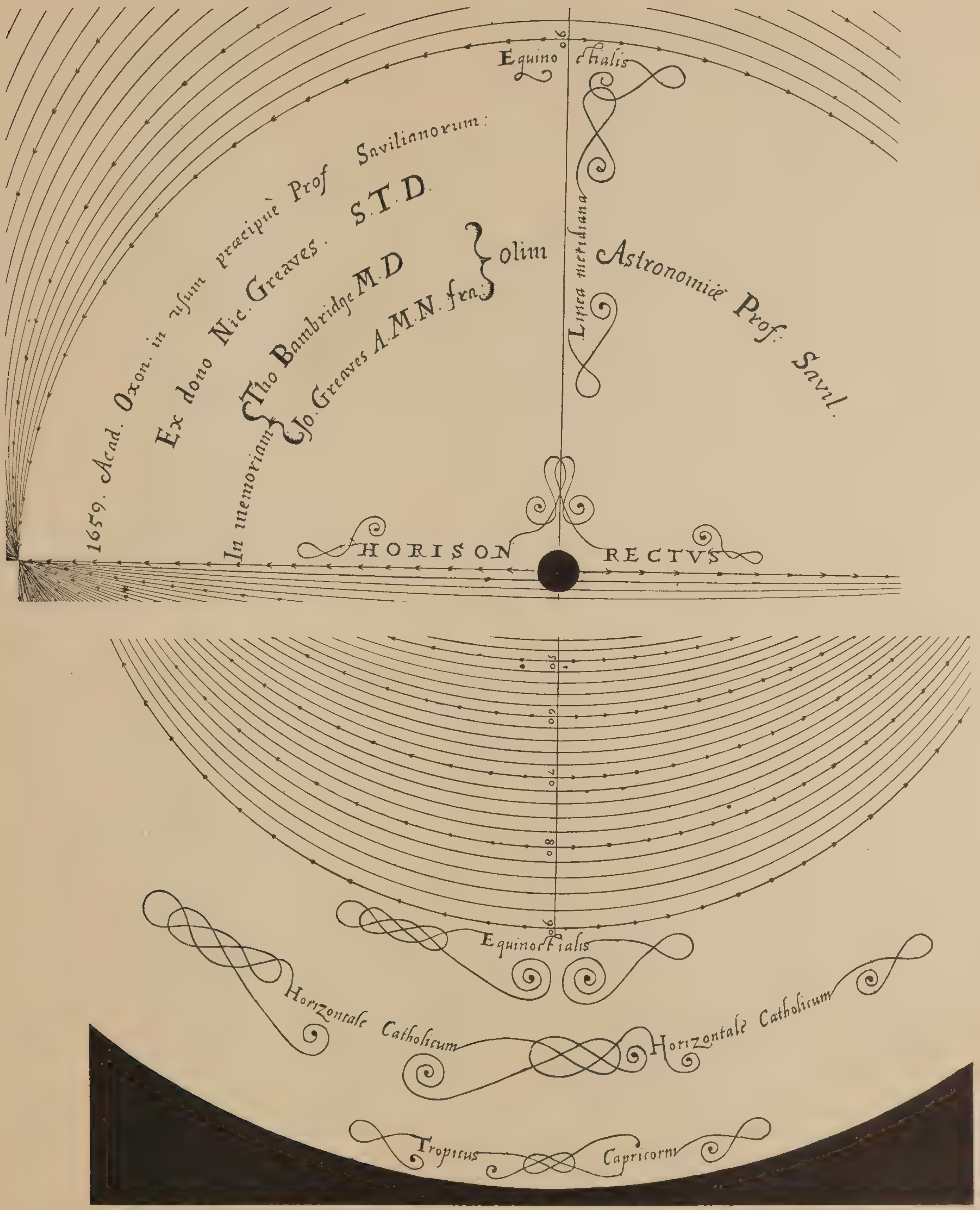
90
Equino ctialis
1659. Acad. Oxon. in usum præcipuè Prof Savilianorum:
Ex dono Nic. Greaves. S.T.D.
In memoriam
Tho Bambridge M.D
Jo. Greaves A.M.N. fra.
olim
Astronomiæ Prof. Savil.
Linea meridiana
HORISON
RECTVS
50
60
70
80
90
Equinoctialis
Horizontale Catholicum
Horizontale Catholicum
Tropicus Capricorni

Fig. 1. Inscriptions on one side of the Tablet of the Astrolabe (1/1)

And the first item on the list was

1. *Astrolabium aereum cum Reti & Planisphaerio*—

presumably the astrolabe of Queen Elizabeth.

In most details the instrument agrees so perfectly with the Great Astrolabe made by Humphrey Cole that the figures of that fine instrument published in *Archaeologia*, lxxvii, pls. LXIII–LXVIII, well serve to indicate its style. It will now suffice to indicate the principal differences. Elizabeth's instrument is the smaller of the two, being 14 in. in diameter. It is of brass gilt, and bears the signature of the maker, 'Thomas II 1559', as on a frontispiece engraved by him (fig. 2).[1] This dates it nine years earlier than any known work bearing Cole's name in full, but five years later than a pocket dial signed 'V. C.', which we have attributed to him.

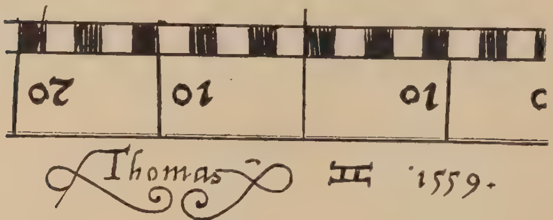

Fig. 2. Signature of Thomas Gemini, 1559

The suspension ring and shackle have been broken off and are now missing. A swivel attached them to a round bracket engraved with the inscription recording Elizabeth's ownership—*Elizabeth Dei Gratia Angliae, Franciae et Hiberniae Regina etc.* on the obverse, with the royal coat of arms and initials 'E. R.' on the reverse (fig. 3).

The thickened rim of the mother, built up of three thicknesses of brass riveted together, is graduated with a circle of degrees numbered by tens, and a circle of the twenty-four hours. The inside of the mother is engraved as a *Quadratum Nauticum*, essentially similar to that in Cole's astrolabe (*loc. cit.*, pl. LXIV) and as figured three years earlier by Gemma Frisius in the *De Astrolabio catholico*. The names of 32 points of the compass are inscribed in full, and the 16 Mediterranean winds are named both in Latin and in Greek. Below, in small italic script, is the aforementioned signature of Thomas Gemini (pl. XI, fig. 1).

The single tablet is engraved like the third plate of the small astrolabe that Cole made for Prince Henry (*loc. cit.*, p. 279). On one side is a *Horizontale Catholicum*, a tablet of forty-five horizons, one for every two degrees (fig. 1). They are crossed by the *Horizon rectus* and the *Linea meridionalis*, an arrangement in all essentials similar to that of Cole's tablet, figured in *Archaeologia*, *loc. cit.*, pl. LXV.

On the reverse are calendar circles for correlating the days of the months with the degrees of the zodiacal signs. The 1st of Aries coincided with 11th March, and due account is taken of the extra quarter-day after 31st Decem-

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[1] Colvin, *Early Engraving and Engravers in England*, 1905, fig. 7.

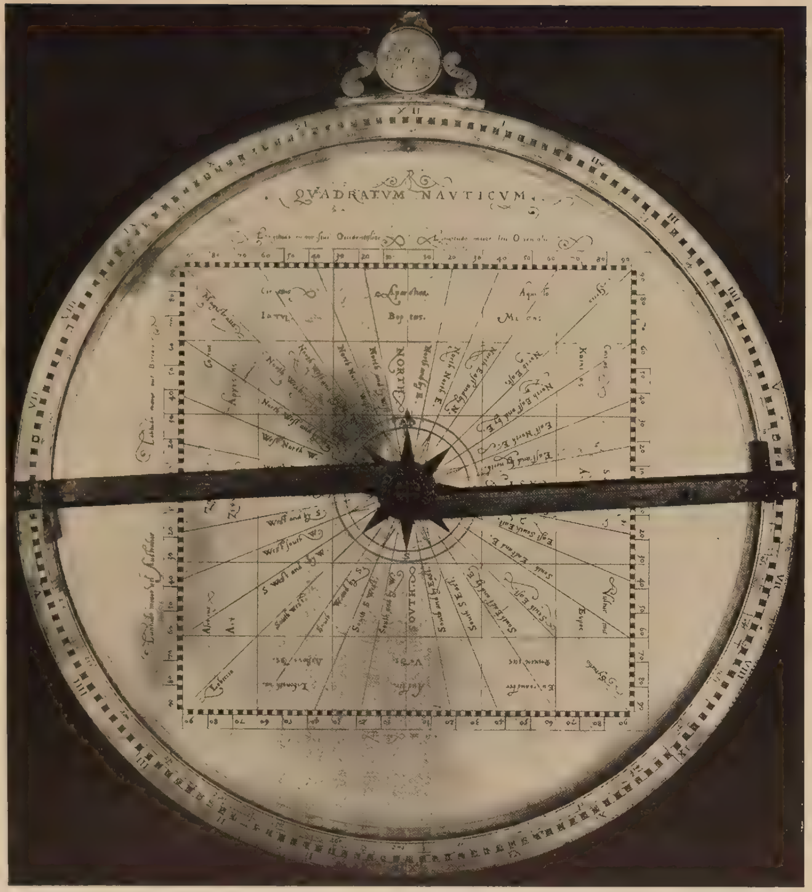

QVADRATVM NAVTICVM
NORTH
SOVTH
North and by E.
North North E.
North East and by N.
North East
East North E.
East and by South
South East
South and by W.
West and by S.
West South W.
South West
North West

Fig. 1. The Seaman's Quadrate and Alidade

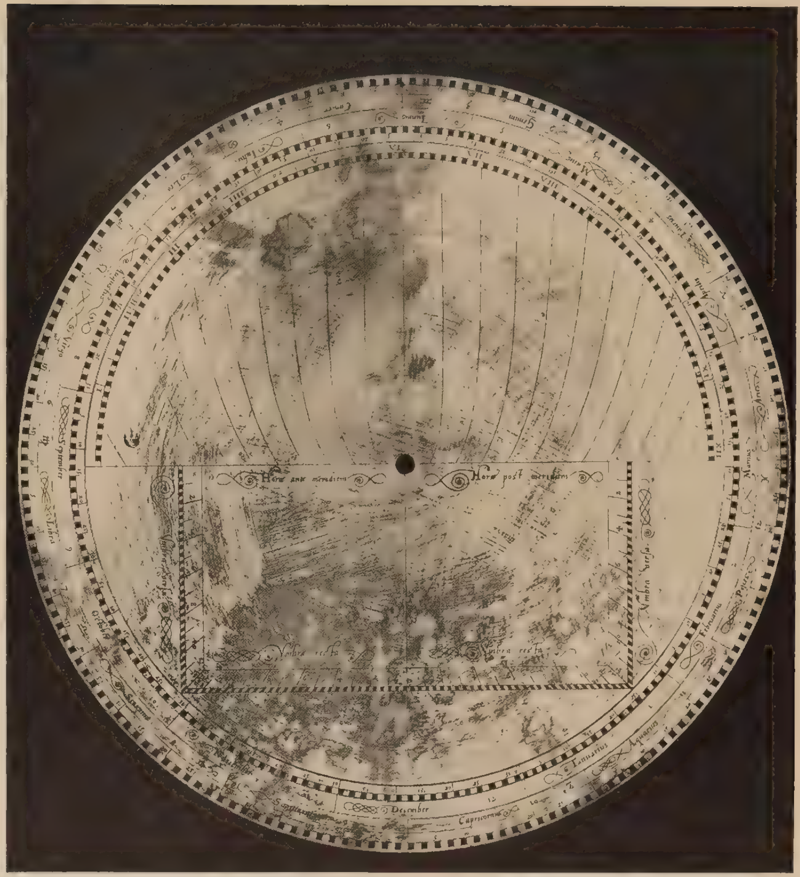
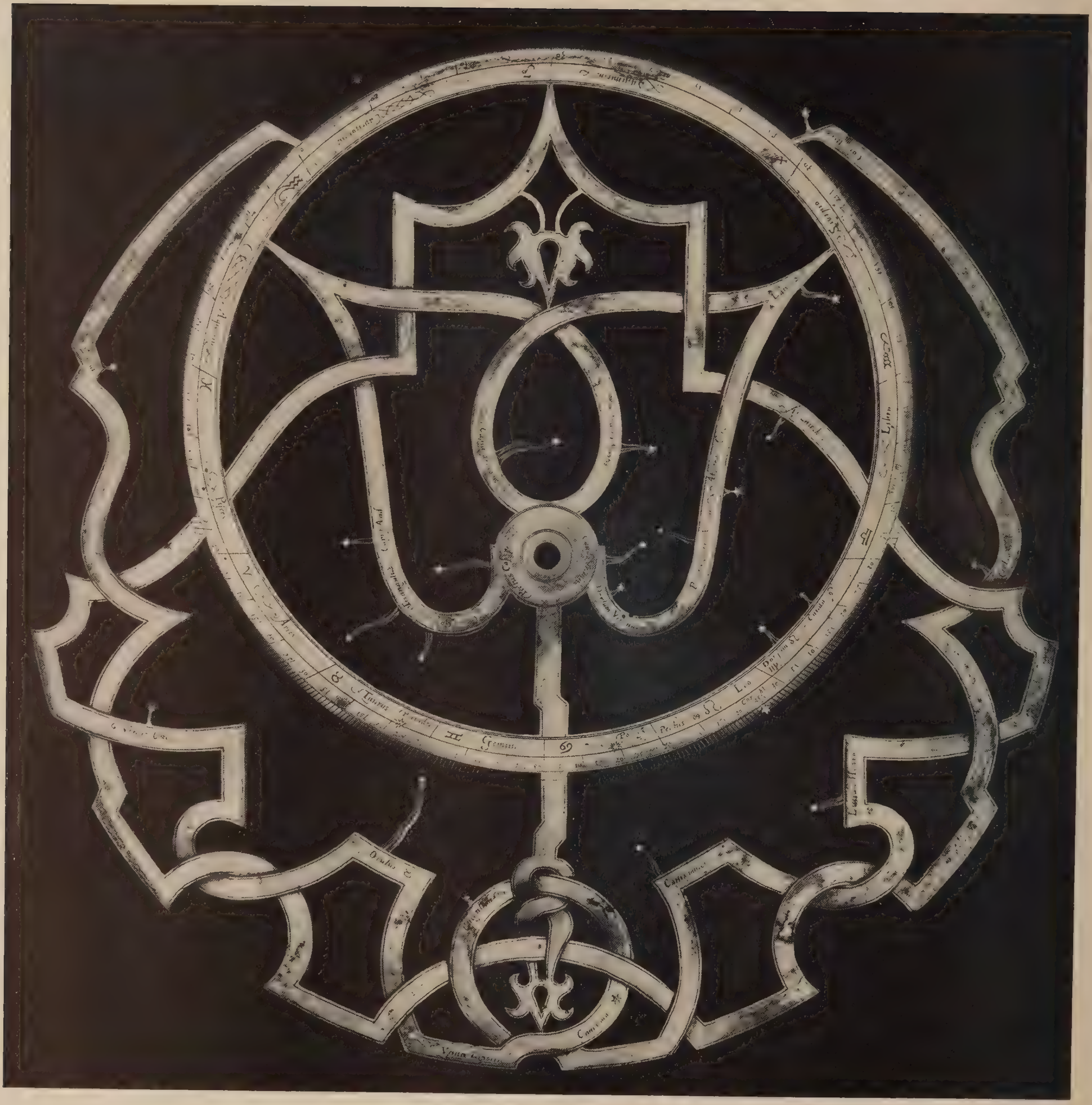

Horæ ante meridiem
Horæ post meridiem
Umbra recta
Umbra versa
December
Capricornus
Ianuarius
Aquarius
Februarius
Pisces
Martius
Aries

Fig. 2. Tablet with Calendar Circles and Scales of the Shadows

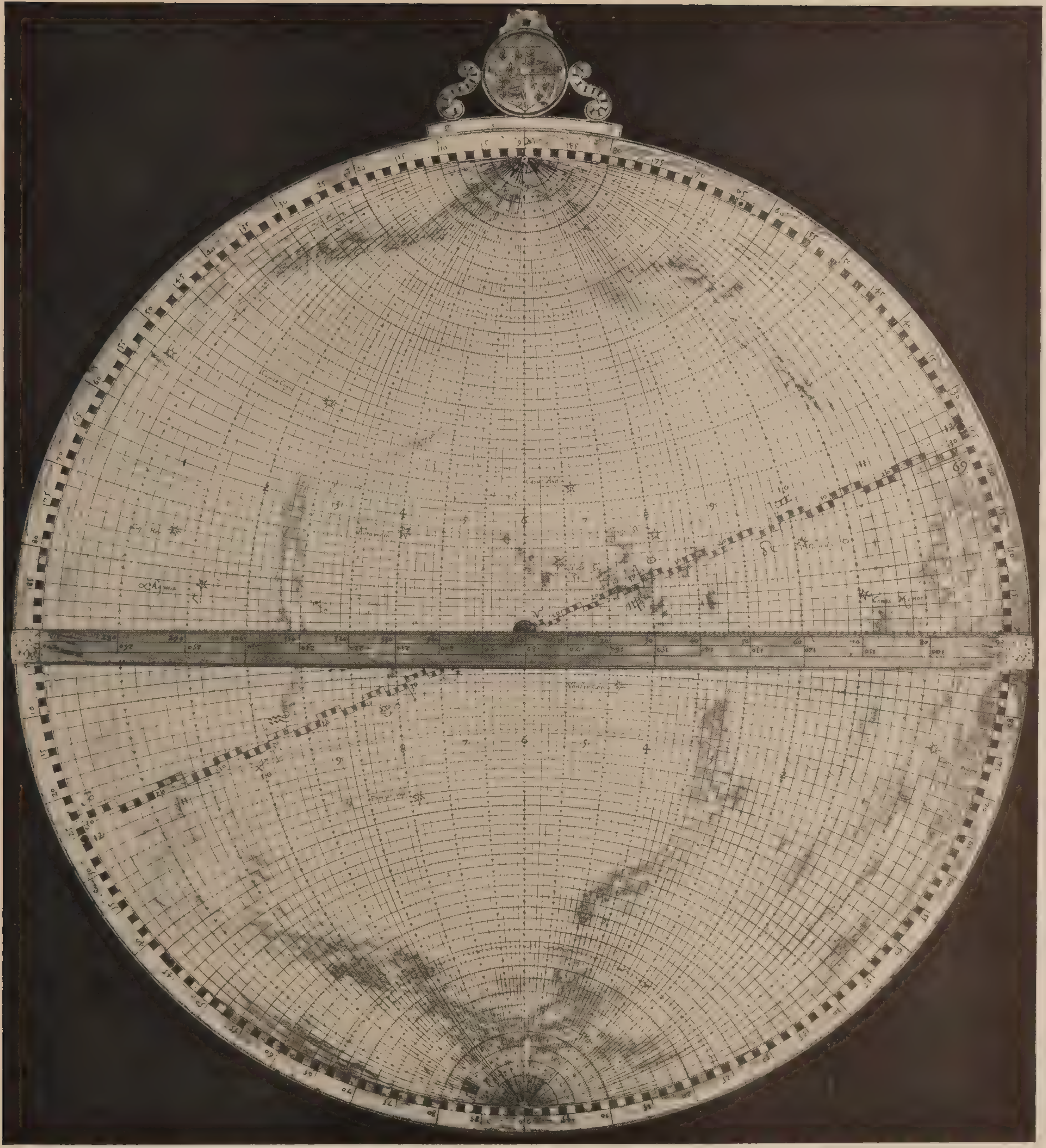
The Astrolabe of Queen Elizabeth

Published by the Society of Antiquaries of London, 1937


Aries
Taurus
Gemin.
Leo

Rete of the Astrolabe of Queen Elizabeth

Published by the Society of Antiquaries of London, 1937



Back of the Astrolabe of Queen Elizabeth

Published by the Society of Antiquaries of London, 1937

ber. Within these circles are Scales of *Umbra recta* and *Umbra versa*; also a scale of the twelve *Horae Inaequales*, or planetary hours, divided in halves. For use with this scale one arm of the alidade is doubly graduated, with *Horae ortus solis* from the centre to the periphery and with *Horae occasus solis* from the periphery to the centre (pl. xi, fig. 2).

The tablet is retained in its right position by a perforation engaging in a small pin in the mother.

The gilt Rete or star-map (pl. xii) is a superb example of the art of the astrolabist. It is designed for twenty-nine stars, most of which are actually represented by gilt metal stars carved at the ends of the star pointers, a most beautiful and unusual feature.[1] The symmetrical design of interlacing strapwork that supports the stars and zodiac ring in position closely resembles the design that became characteristic of instruments made in the atelier of the Arsenius brothers of Louvain, but of all dated instruments by members of that school this is the earliest known example. Indeed, were it not for the fact that Gemini was himself of Flemish origin, we might suspect the design of the Arsenius instruments to have had an English ancestry.

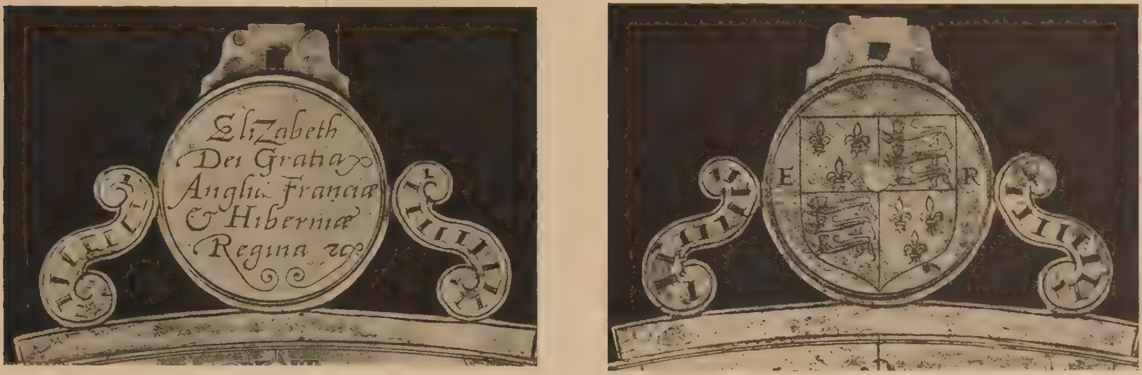


Fig. 3. Bracket inscribed with the name and coat of arms of Queen Elizabeth

List of twenty-nine stars on the Rete

Caput And[romedae]
Pectus Cassiop[eiae]
Triangulus
Venter Caeti
Caput Gorgonis
Pleiades
Oculus ♉
Cingulum Ori[onis]
Venter Leporis
Canis ma[ior]
Canis minor
Pollux

[1] Dr. Philip Fox, the director of the Adler Planetarium in Chicago, informs me that he is fortunate enough to have in his keeping in the Mensing collection an English astrolabe, by John Blagrave, that exhibits this feature, as well as two smaller instruments. In the Blagrave instrument (*Astrolabes of the World*, pl. 141) the stars are not chased in full relief.

Pectus ♋
Lucida Hydrae
Cor ♌
Dorsum Vrs[ae] ma[ioris]
Dorsum ♌
Cauda ♌
Algorab
Cauda Vr[sae] Ma[ioris]
Pes posterior Vr. ma.
Spica ♍ (no star)
Alfeca Coro[nae]
Alramech
Lanx Sep[is]
Hasta Bootis
Cor ♏
Caput Draconis
Scheat

The alidade is fitted with sight-vanes each drilled with two pin-holes, and its fiducial edge is graduated for measurements of *Latitudo Meridionalis* and *Latitudo Septentrionalis.*

The back of the astrolabe (pl. XIII) is engraved, as are Cole's later astrolabes, with a horizontal projection of the sphere, which was derived from the planisphere of Gemma Frisius, and was employed in instruments by Egnatio Danti during the next two decades. The following fourteen star positions are marked upon it:

Wultur
Cap. Her[culis]
Aquila
Cauda Cigni
Alramech
Cauda ♌
Caput And[romedae]
Cervix ♌
Canis maior
Canis minor
Oculus ♉
Venter Caeti
Spica
Fomahaud

In use the planisphere is traversed by a movable horizontal rule graduated into 360 degrees fixed to, and rotating with, a central pivotal pin that holds all parts together. But the *cursor* and *bracheolus*, which are necessary for finding the time by the projection of the sphere, have been lost. Their construction would have been similar to that of the similar parts of the Arsenius astrolabes figured in *Astrolabes of the World*, pls. 93 and 97.

Before the discovery of this astrolabe no scientific instrument had been identified as the work of Thomas Gemini, and although in 1556 we find him advertising his dwelling in London within the 'Black Friers' and his readiness 'exactly to make all the Instruments apperteyning' to the well-known *Boke named Tectonicon* by Leonard Dygges Gentleman, I advanced reasons for believing that for such work he was assisted by an instrument-maker in his employ, who, when working on his own, signed himself as 'V. C.', and who, I suggested, was no other than young Humphrey Cole.[1] I was led to this conclusion by the facts that, on the one hand, the graduation of scientific instruments is a tedious job which few persons have the patience to undertake successfully, and that, on the other, Gemini was too much occupied with other interests, and too highly gifted with an artistic temperament, to do such mechanical work himself.

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[1] *Archaeologia*, lxxvii, 309.

The following résumé of his varied pursuits may help to elucidate the problem. Gemini was a foreigner. He describes himself as 'Lysiensis', which might mean any place on the river Lys, or perhaps Lys-lès-Lannoy by Lille. Certainly, the style of his art, his epithet 'Flander', and his description by Bagford as a 'duchman' indicate that he came from the Low Countries.

We first hear of him in England in 1524 when on 21st July the Stationers' Company 'Received of Thomas Gemyne, stranger, for transgressynge the ordinance of this house, callying a brother of the companye a fasse (false) knave, xii*d*.'

In 1545 he engraved a long series of anatomical plates to illustrate his large work, the *Compendiosa totius Anatome delineatio*, based on the great work of Vesalius, 1543. The text was in Latin, and the book, with the royal arms surrounded by allegorical figures on the frontispiece, was dedicated to Henry VIII. The book met with such success that it brought its illustrator the reputation of being a skilful surgeon (to which apparently he was not entitled), and from 1547 to 1563 he was employed as a surgeon, in receipt of a regular payment of £10 a year from the privy purse for duty at the Court. The book was translated into English by Thomas Udall, and, dedicated to Edward VI, again appeared in 1553. In this edition Gemini spoke of himself as 'not so perfeict and experte in the English tonge that I dare waraunt or trust myne owne dooynges', and also as 'livyng and beyng here by the King's most gracious bountie'.

In May 1555 Gemini was summoned, with eight other men and one woman, to appear before the Council of the College of Physicians for examination and punishment, as an 'impostor'.

It is not impossible that the College was moved by a complaint from Vesalius, who in 1546 had written to his friend Joachim Roelandt of the injustice done to his anatomical illustrations by want of knowledge and accuracy in the copyist. Why, he asked, did these blockheads of imitators, 'ineptissimi imitatores', not take advantage of his published offer to lend the original blocks for printing abroad if occasion arose? Nevertheless, Gemini continued to receive his surgeon's stipend of £10 for another eight years, until 1563.

In 1548, the year after his appointment as Court Surgeon, he published a book on ornamental engravings, a specimen of which was published by Mr. Campbell Dodgson in the *Proceedings* of this Society in June 1917. Its engraved title, *Morysse and Damaskin renewed and encreased | Very profitable for Goldsmythes and Embroderers by Thomas Geminus at London Anno 1548*, is the only specimen of English engraving of the reign of Edward VI.

Gemini was the first engraver who worked on metal, and who put his name to his work, in England. Experts describe his work as having an undoubted Italian character. Cole may have learnt his art from him, and, knowing him for a foreigner, signed some of his own later work as that of 'A English Man born in ye North'.

In 1555–6 we find Gemini trading in Blackfriars, where he printed two books for Leonard Digges, *A Prognostication of Right Good Effect* and the *Tectonicon*. When Queen Elizabeth came to the throne in 1559 he produced the third edition of the Anatomy, substituting her head for the coat of arms on the title-page. This portrait can hardly be considered a success, and with other efforts at royal portraiture it may have led to the drafting in 1563 of an ordinance to forbid persons 'to draw, paynt, grave or pourtraye her Majesties personage or visage for a time untill by some perfect patron and example the same may be by others followed'. The astrolabe was dated as of the same year. Gemini's last work, in 1570, was a map of Spain in Ortelius' *Theatrum Orbis Terrarum*.

APPENDIX

Note on Thomas Gemini by John Bagford

'Of the first printing in the late dissolved Convenziall Monastery of Blackfriers the first that we mete with mentioned is Thomas Gemine and I suppose to be a duchman by birthe he first setlet hear in the time of Henery the 8 he then printed and graved the Annotami of Mann in folio and dedicated to Henery the 8 and this was in the year 1545 in Latin and was the first of that kind done in England and the second Impression it was translated into English by one Thomas Udall and this was dedicated to King Edward the 6 with some amendmentes 1550, the third and last impression was dedicated to Queen Elizabeth with her picture in the titlepage and this was finished in the year 1559 in the first year of the Rayne of the Quen and this is one of the furst peces of graving that we have had in this our nation of England and at that time of day they then had not the use of the Rouling prese in no partes in England whether ther wayer graved in Copper or in pulter is to be questioned. He the sade Gemine I believe was a surgeon bred and might take his Coppey from that of Vasalius printed at Basill 15— he was a man who could turne himselfe to aney macaneck worke as ma be sene that he then made Mathematicall Instrumentes for Leonard Digges and outhers. wharaboutes he leven in Blackfriers I am at a loss I have sene bookes by him prented in 15— I do not question but that he had prented sevirall Bookes which but few have com to my hands' (Colvin, *loc. cit.*, p. 13).

⁂ While these pages were passing through the press, an earlier Astrolabe by T. Gemini was discovered by M. Henri Michel in the Royal Observatory of Belgium. It is said to be 313 mm. in diameter and dated 1552. The astrolabe is engraved with the arms and initials of Edward VI and John Dudley, duke of Northumberland. A third escutcheon charged with three crescents with a smaller one between them (? for difference) is flanked with the initials I C (*Ciel et Terre*, No. 5, 1937).

The other Savilian Instruments have been described in *The Observatory* for July 1937.

III.—*The Crowns of England*

By M. R. Holmes, *Esq., F.S.A.*

Read 13th February 1936

At only one period in English history was it thought that the country had no further use for crowns, and that brief seventeenth-century heresy led to an act which has since been deplored for nearly three hundred years—the destruction of the Regalia. The significance of this destruction is worth emphasizing at the outset, as it meant a real break in the history of the development of the crowns themselves. A general popular belief is that, up to this time, all the sovereigns from William the Conqueror onwards had been crowned with the crown of St. Edward the Confessor, and all those after the Rebellion used the new St. Edward's Crown made at the Restoration. But the matter is hardly as simple as that. Not only do we find references to, and pictures of, various other crowns, but the coronation crown in some descriptions sounds very unlike a Saxon diadem, and we find, besides, that the present St. Edward's Crown has by no means been used at every coronation since it was made.

The Great Seals of Edward the Confessor and the four Norman kings have been reproduced by many writers since Selden used them for the section on crowns in his *Titles of Honour*, and the variations of their diadems were worked out, not so long ago, by our Fellow Mr. Cyril Davenport. The evidence of coins and seals is necessarily crude, but suffices to show us at least the type of crown with which the Saxon artist was familiar, a broad, pearl-studded band, apparently arched across the top (fig. 1, *a* and *b*). And here, at the outset, a word may be said as to the evidence afforded by royal portraiture at the various periods. Coins, portraits, and effigies of the middle ages are valuable for details of costume and armour in general, rather than as records of specific ornaments. The crowns depicted here are not to be regarded as exact likenesses of the king's personal jewellery, but they do indicate very clearly the type of crown which at one period or another the artist was accustomed to see. In the middle ages the king's crown was as much an article of dress as were his cloak and shoes. Like them it could change with the changing fashions, and its characteristic proportions and outline were quite as easy to record as the actual lineaments of the wearer.

With the Tudors and early Stuarts we reach an age of more or less exact portraiture. The crown was no longer regularly worn—I know of no crowned portrait of Mary Tudor save those on her coins and Great Seal—except by Queen Elizabeth, but it is seen in the background of more than one portrait of Charles I or Henrietta Maria, and approximates closely to other representations. With the end of the seventeenth century, however, comes a period when royal portraiture may not be trusted. It would seem that the face alone was painted from the sitter, and sometimes the face alone was the work of the portrait-painter. Details of costume, drapery, and decorations would be put in by some artist who specialized in such matters, as did, for instance, Van Aken, and the emblems of royalty that lie on a side-table in many an eighteenth-century portrait would be painted from studio 'properties' or designed from sheer imagination. Generally speaking, such portraits are untrustworthy from 1680 to 1750. There are, of course, exceptions, but the painted crowns of the late Stuarts, the first two Hanoverians and their consorts must generally be looked upon with suspicion. The National Portrait Gallery's portrait of Queen Charlotte once more shows a recognizable crown, and brings us back to a style of portraiture in which such details are more or less faithfully attended to.

Details of early crowns are obtainable, not infrequently, from chronicles and State documents. The first Plantagenet was crowned, according to Capgrave and others, with the crown of his mother's first husband, the Emperor Henry V. Étienne of Rouen, who describes it in his *Draco Normannicus*,[1] says it was so heavy that it had two silver rings at the sides, by which it might be supported. It was made in two pieces, and when joined together had a large jewel and a cross of gold above the brow of the wearer. This detail is interesting, as the cross is not usually represented as adorning the rim of a crown before the fifteenth century. We shall, however, find it referred to in at least one thirteenth-century document. The necessity of supporting the heavy crown over the king's head is mentioned by other writers. In one of the Cotton MSS.[2] in the British Museum it is mentioned as one of the duties of the Earl Marshal of England. He is supposed to be standing by, holding the crown, and 'when the crown is put on the king's head, the earl should put his hand on the flower in front, and take this flower in his hand to hold up the crown, because he is Marshal in peace and in war'. This seems very clear, but it obviously applies to a crown of the old open pattern, with trefoils or fleurs-de-lis all round and no front cross or silver supporting-rings. It shows, however, that the coronation crown was thought of, in the twelfth century, as being unwieldy for the king to wear unaided, and in the first detailed report we have of a coronation, Roger of Hoveden's account of the crowning of Richard I, we hear of the king changing his crown for a lighter one at the end of the service.

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[1] Rolls Series, 83, p. 758. Cited by Norris, *Costume and Fashion*, ii, 122.

[2] Vesp. B. vii, f. 100 b.

This description mentions, moreover, that the coronation crown was supported over the king's head by two earls on account of its weight. This sounds as if it were his father's crown with the silver side-rings. It may have been worn again some years later, when after his imprisonment and ransom he went through a State service at Winchester, something like a coronation, except that he was not formally invested, but publicly wore his robes and crown throughout. At the end of this service, again, he changed into a lighter set of vestments and a lighter crown. It is possible that the shape of this German crown is indicated by that on the effigy placed over Richard's heart in Rouen Cathedral

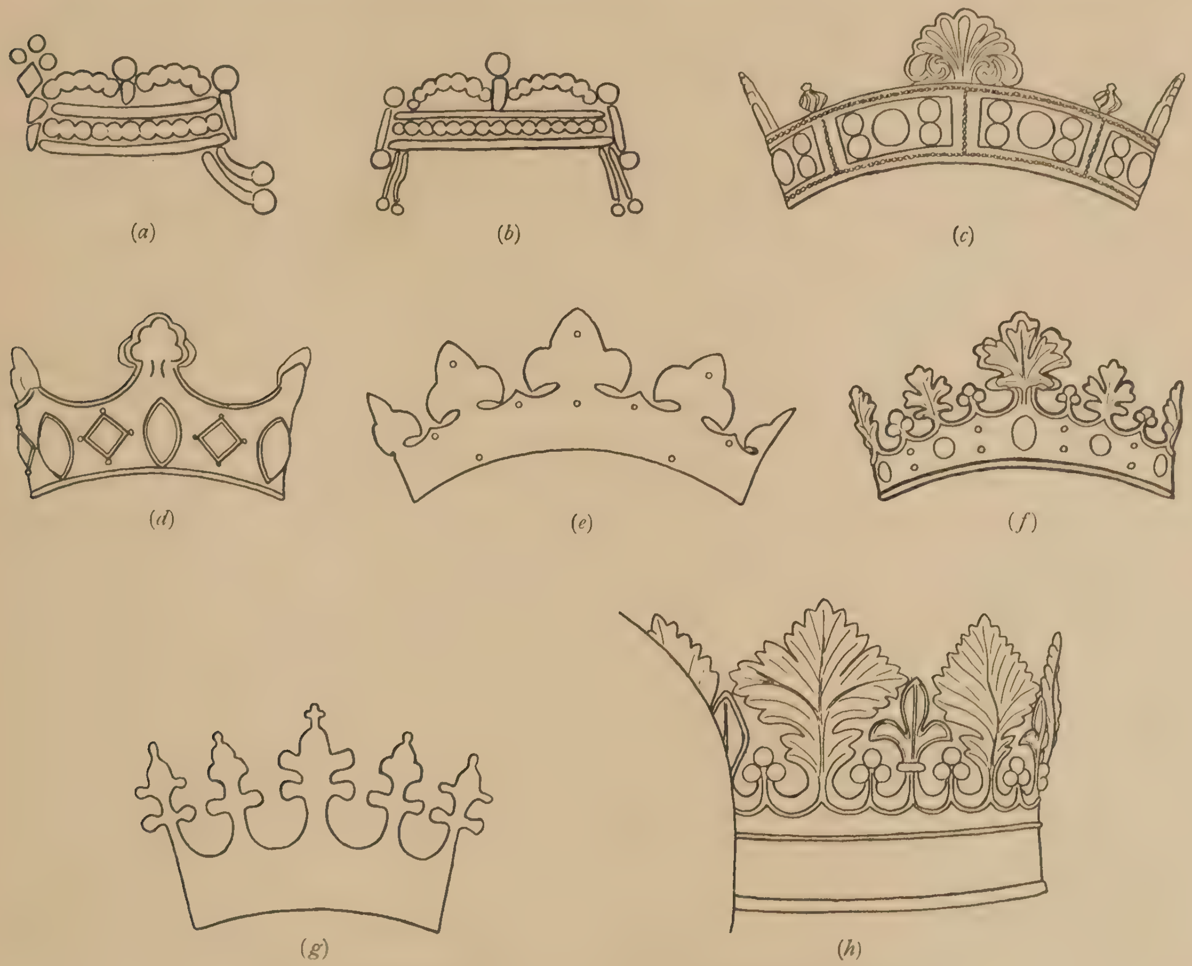

Fig. 1. Changes in the style of crowns, eleventh–fifteenth centuries

(*a*, *b*) Eleventh century, from coins of William I; (*c*) Byzantine type (restored) from effigy of Richard I at Rouen; (*d*) late twelfth century, from effigy of Richard I at Fontevraud; (*e*) thirteenth century, from effigies of Henry III and Eleanor of Castile at Westminster; (*f*) early fourteenth century, from effigy of Edward II at Gloucester; (*g*) late fourteenth century, from portraits of Richard II; (*h*) early fifteenth century, from effigy of Henry IV at Canterbury (fig. 1, *c*). The broad band of gold, with small ornaments on the upper rim, suggests the crowns of the Byzantine Empire, like Justinian's in the Ravenna mosaic, and it is a pity that the Rouen effigy is too badly broken for us to know whether the crown had a cross above the brow.

The Annals of Winchester say that Richard was buried in the crown he had worn for the Winchester service, but one may be allowed to doubt whether the crown was really permitted to go into the grave with him. He wore it when lying in state upon his bier, as was the custom, but at his actual burial a crown of cheaper material may well have been substituted, as was done at the burial of Edward I just over a century later. When Edward's tomb was opened by this Society in 1774, the body was seen to be wearing a floriated crown, not of gold, but of base metal.[1]

When we come to John's reign, we find various semi-official descriptions of the regalia, which have been collated by the late Sir William St. John Hope in his articles on 'The King's Coronation Ornaments' in the first two volumes of *The Ancestor.* Here at least two crowns are mentioned. One is described as 'the great crown which came from Germany', another is 'our golden crown made in London'. The documents are receipts for State robes and jewels sent to the king at various places. The London crown was sent to him at Reading in 1204, with elaborately jewelled robes of red samite. The German crown, presumably that with which his brother and father had been crowned, went to Clarendon in 1207, with some purple vestments, not so rich in jewels. Another list, dated from Canfield in the last year of the reign, when John was in danger of losing his crown and his kingdom, mentions the red samite robes and 'one crown with precious stones, with one cross and seven flowers'. This, from the mention of the cross, would appear to be Henry II's 'great crown', and this name, 'our great crown', also occurs in connexion with a crown sent out for John to wear at Caen. There was apparently a gold crown as well, which was given to John's foundation of Beaulieu, and made into a shrine or casket.[2]

Discussion of John's crowns would be incomplete if we were to pass over without comment the popular belief that John's crown was lost, with his luggage, in the quicksands of the Wash. As Dr. C. R. Beard has pointed out,[3] we have evidence from what is known of John's movements that he and his immediate followers were at no time in danger of being caught by the tide. So important a jewel as the crown would, like the Great Seal, travel with the king, and not be left to come on afterwards with the servants and luggage. What was lost was probably the king's baggage-train, with his tents, camp-vessels, munitions, and recent plunder.

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[1] One other crown associated with Richard I is the little-known one said to have been given by him to the shrine of St. Agatha at Catania. This was probably a crown made locally for the image at the king's expense, not one of his personal ornaments.

[2] See Dr. Rose Graham in *Archaeological Journal*, lxxxiii, 87.

[3] *The Romance of Treasure Trove*, 110 sqq.

About Henry III we are, or used to be, told that, being too small for the 'great crown', he was crowned with his mother's bracelet. Matthew Paris says that the coronation was performed 'with a certain golden circlet', but the more picturesque version is apparently no more than a later elaboration. In 1220 Henry was crowned again at Westminster, and there exists the receipt for a crown and robes brought back to London from Corfe, where they had apparently been stored ever since John sent for them to Canfield.[1] This time the crown is called 'a golden crown complete, adorned with various stones'. The changing fashion in crowns of this period is illustrated by Matthew Paris in his various *Histories*, and by the funeral effigies of Henry himself and his daughter-in-law Eleanor of Castile in Westminster Abbey (fig 1, *e*). The burial crown of Edward I is said[2] to have been of simple form, with floriated ornaments lower than the tall pinnacles of the earlier crowns shown on the tombs at Fontevraud (fig. 1, *d*). Its general proportions, though not its details, are indicated in the sketch made in 1774 for publication in *Archaeologia* (pl. XIV, fig. 1), but its exact outline is concealed by the folded veil that still lies over the king's face.

In the documents of Edward's reign we find the 'great crown' taking a new part in the ceremony, for a wardrobe account of 1299, in the library of this Society, describes 'a great crown of gold with square balas-rubies (or spinels), emeralds, eastern sapphires, rubies and great eastern pearls . . . which is appointed to be carried over the heads of the kings of England when they go out from the church to the banquet on the day of their coronation'.[3] If, as appears from this, the 'great crown' is no longer the actual coronation crown, we must find, if possible, what has taken its place. It may help us, in this connexion, if we remember that in the previous reign the king had transferred the body of St. Edward, who had not been very long canonized, to a new and splendid shrine in the church he was rebuilding in his honour, and that it was apparently the custom, whenever the Confessor's body was exhumed, for some attempt to be made to keep a souvenir of the event. Gundulf, bishop of Rochester, tried to pull a hair out of his beard in 1102; Laurence, abbot of Westminster, removed his vestments and ring later in the century; and it is not impossible that Henry III, whose devotion to St. Edward was notorious, preserved his crown as a relic, replacing it with the 'list of gold' which Henry Keepe felt, but could not remove, when he in his turn robbed the coffin in 1685. It is, at any rate, certain that we now find mention of the Crown of St. Edward as a national relic. Hemingburgh tells us that, when discussing the question of homage due to the English crown by the kings of Scotland, Edward I declared that he would have

[1] Pells Receipt Roll, no. 2a, m. 1.

[2] *Archaeologia*, iii, 384.

[3] MS. 119, f. 285.

the due right of the kingdom 'and of the crown of St. Edward, of which he was the guardian'. Robert of Gloucester, likewise, gives a hint to the same effect in his account of the crowning and anointing of King Alfred at Rome by Pope Leo IV. Most of his information for this he gets from William of Malmesbury, as was pointed out by Howlett in his edition of Robert's work for the Rolls Series. But he makes one significant addition. 'The Pope Leo him blessed', he says, 'when he thither came, and the king's crown of this land, *that in this land yet is.*' That last piece of information about the crown is given neither by William of Malmesbury nor by Henry of Huntingdon, and there is no reason for Robert's inserting it save the belief that the crown of the Saxon kings was still treasured at St. Edward's shrine.

Edward I disliked wearing his crown in public, and the three jewelled crowns which appear beside the 'great crown' in inventories of the royal treasury had belonged to Blanche of Castile. One was set with rubies, emeralds, and large pearls, one with rubies and emeralds only, and one with Indian pearls; and one of these three may in fact be King John's 'London' crown, as Adam de Stratton, who had had to disgorge various ill-gotten gains a few years before these inventories were made, was found to have got possession of £30,000 odd and a crown said to be King John's.

Edward II owned at least ten crowns, according to a wardrobe account, nine being of gold and one of silver. These, however, would be personal jewellery, for the most part, and not ceremonial diadems. At this king's coronation great offence was given by the fact that St. Edward's crown was carried in the 'polluted hands'[1] of Piers Gaveston. From the way the fact is described it is clear that the offence was not so much the honour done to Gaveston as the dishonour done to what was now definitely regarded as a holy relic. If we are to judge from Edward's effigy at Gloucester, the fashion in ordinary crowns now favoured something a little more floriated than the simple crowns of the previous century (fig. 1, *f*), but the artist who drew the miniatures in Queen Mary's Psalter[2] shows us a continuance of the simple type in fourteenth-century art.

The four crowns in the treasury of Westminster are met with again in an inventory of the time of Edward III, but the note on the 'great crown' has undergone a significant change. Instead of being 'the great crown used on coronation day', it has been turned to yet another purpose, and has become 'the King's great crown which was recently pledged in Flanders'. The second crown, with the emeralds and great pearls, is mentioned in the same list, but the other two are not described, being put down merely as the third and fourth crowns.

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[1] Walsingham's phrase is 'manibus inquinatis'.

[2] B.M. MS. Royal 2 B, vii.

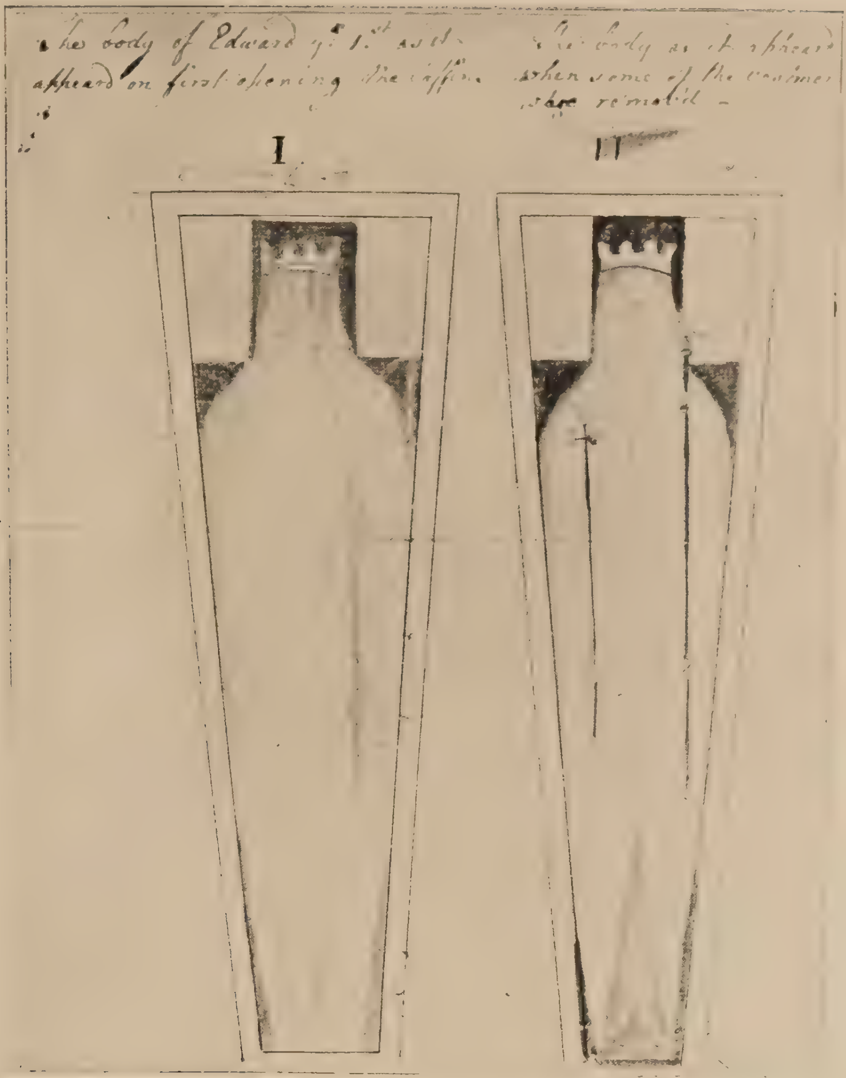
The body of Edward ye 1st as it appeard on first opening the coffin
The body as it appeard when some of the coverings were removed –
I
II

Fig. 1. Drawings of the body of Edward I, sketched when his tomb was opened by the Society of Antiquaries in 1774. In the library of the Society

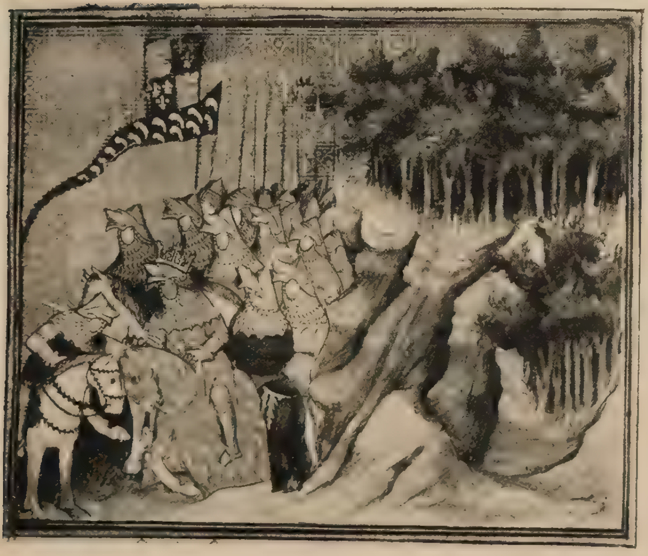

Fig. 2. Henry of Monmouth knighted by Richard II. Brit. Mus. MS. Harl. 1319

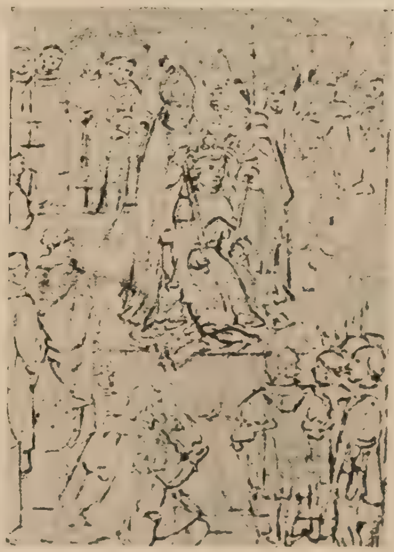

Fig. 3. A coronation at Westminster. From the Islip Roll, now in Westminster Abbey Library

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Richard II seems to have altered the crown somewhat, or to have had a new one made. Not only in the portraits in Westminster Abbey and the National Portrait Gallery, but on the miniature figure in the well-known illuminated account[1] of his fall (pl. XIV, fig. 2), he is seen wearing a tall crown with spreading points, a type characteristic of the end of the fourteenth century (fig. 1, *g*). It was presumably in this reign that one of the crowns was adorned with the great irregular spinel given to the Black Prince by Pedro the Cruel, King of Castile.

Froissart, in his account of Richard's deposition, says that he ceremonially took off his crown in the Tower and handed it to Henry of Lancaster, saying: 'Henry, fair cousin, and Duke of Lancaster, I present and give to you this crown, with which I was crowned king of England, and all the rights dependent on it.' The phrase rather suggests that St. Edward's crown is referred to, and Froissart adds that the crown and sceptre were safely packed up and given to proper guards, to place them in the treasury of Westminster Abbey until they should be wanted.

Incidentally, Froissart gives us a curious piece of information about the coronation of Henry IV. He tells us that Henry was crowned with 'the crown of St. Edward, which is arched over like a cross'. Can this be indeed St. Edward's crown, or has Froissart got his information nearly correct, but not quite, as he has in at least one other point of the same ceremony, when he refers to the Barons of the Cinque Ports as 'four citizens of Dover'? It may be that the old 'great crown' of Henry the Emperor had a single arch behind its cross like the crown of Charlemagne, though it is strange that this should never have been mentioned, and it does not seem to be implied by Froissart's phrase 'archée en croix'. It was some time, too, since the 'great crown' had been used for an actual coronation crown, and there is no reason why it should have been so used, now that the relic of St. Edward was available. Possibly Froissart, or his informant, saw Henry crowned with a new state crown of the closed or 'imperial' form, and was misled, by what he knew of English customs, into thinking it the crown of St. Edward. Or perhaps, as is not impossible, the chronicler is telling the exact truth, and the Saxon crown *was* arched over like a cross. The crowns on certain Saxon coins indicate this possibility (fig. 1, *a* and *b*), and we have in Evelyn's *Numismata* the definite statement that 'Edward the Confessor had of early days a barr'd crown'. The relic does not seem to have appeared in public except at coronations, so it is not unnatural that the illustrator of the fifteenth-century Froissart in the British Museum drew an old-fashioned open crown in his picture of the coronation scene. At the time when Evelyn was studying law in London, however, the saint's crown was preserved at Westminster in an iron box, and was no doubt available to the curious. We have, then, some ground for assuming that Froissart and Evelyn were not speaking entirely at random when they both attributed an arched form to St. Edward's crown.

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[1] B.M. MS. Harl. 1319.

It seems to have been an accepted belief, by about 1600, that the imperial crown had been adopted some two hundred years before. Christopher Schwitzer's drawings for Speed's *Chronicle of Great Britaine*, published in 1611, show only one change in the whole sequence of crowns surmounting the Royal Arms from Saxon times to the accession of James I. That change comes with Henry V. His arms, and those of his successors, are topped not with an open crown, as heretofore, but with a true 'imperial' crown, with four arches meeting and crossing, and the usual 'mound' and cross on top. Speed took some care about his illustrations, and credits Schwitzer, in the text, with 'the most exquisit and curious hand of our age', so it is obvious that this change was not merely arbitrary, but illustrates a popular opinion of the time.

Henry IV wears an elaborate open crown on his tomb at Canterbury (fig. 1, *h*); Henry V uses two closed crowns on his chantry at Westminster (pl. xv). It may be assumed that the smaller crown, which is being set on his head while he holds the orb, is intended for the actual coronation crown—it strongly resembles the coronation crown illustrated about a century later in the Islip Roll (pl. xiv, fig. 3)—and that the tall imperial crown in the corresponding group is the crown of State (pl. xv, fig. 2). The author of the account published by Hearne as that of Thomas of Elmham certainly implies that, like so many others, the king wore a different crown at the coronation banquet.

Most of the contemporary chroniclers of Henry say that the gold and jewelled crown upon his helmet suffered in the battle of Agincourt. St. Remy, who was with the English army at the time, says that the crown was arched like an imperial crown; Pseudo-Elmham says that certain parts of it were broken off in the battle; and the anonymous translator of Titus Livius Forojuliensis describes it afterwards as 'broken and depeased in the fielde by the vyolence of the enimie, and great strokes that he there receaved'. It is always said that the Black Prince's ruby was in this Agincourt crown. In the Parliament Rolls comes a specification and valuation of 'the goldencro wn for the bascinet'. The first item on the list is four balases amounting to £133 6*s.* 8*d.* The ordinary value of a balas-ruby, to judge by the others in the list, was £13 6*s.* 8*d.*, so the extraordinary high price of this group of four is evidence that one at least of them must have been of particular size and value. This set of four is the only item in the list where the stones are not valued separately, and implies that people were loath to put a particular figure on the individual jewels which composed it—or at least on one of them. We may safely conjec-

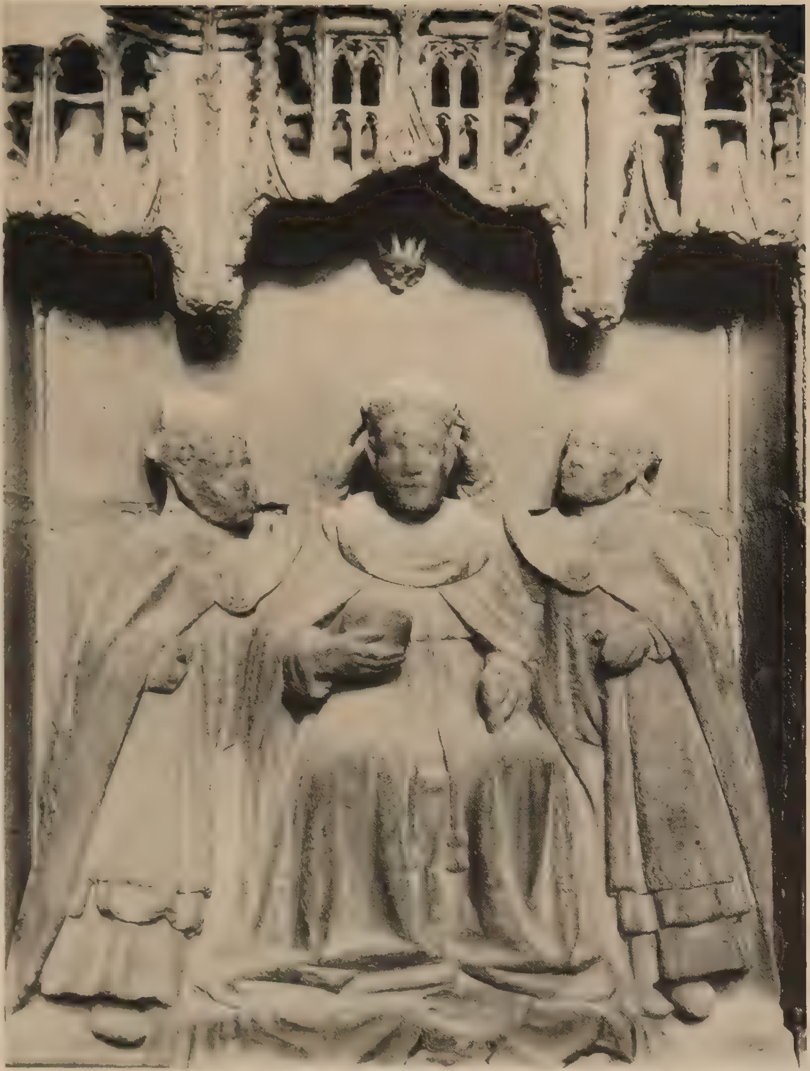

Fig 1. Henry V crowned with St. Edward's Crown

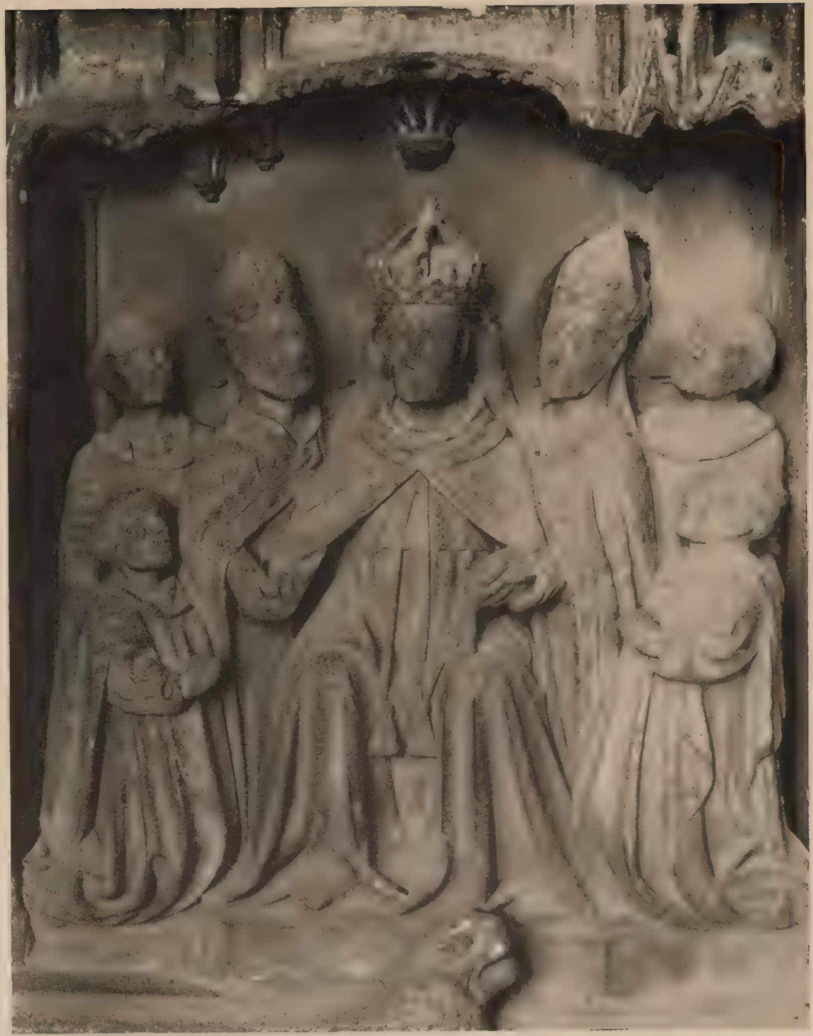

Fig. 2. Henry V enthroned and wearing the Crown of State

Westminster Abbey. Chantry of Henry V. Coronation groups

Published by the Society of Antiquaries of London, 1937

ture, therefore, that this item included the great stone which had only recently been added to the treasures of the Crown Jewels.

In addition to the helmet-crown, Henry had several others. One was the state crown which was among his luggage at Agincourt and was carried off, with the royal seals and what seems to have been the state sword, by the French who looted the camp. The Sieur de Gaucourt went to a great deal of trouble afterwards to recover these valuables. Several minor pieces of plate never came back at all, and the other things had fallen into various hands, the sword going to Philip, Count of Charolais, who afterwards became Duke of Burgundy under the name of Philip the Good. The correspondence in regard to this matter is cited by Sir Harris Nicolas in his book on Agincourt.

Other crowns, also mentioned by Nicolas, were pledged in England to finance the French wars. One is the 'Crown Henry', pawned, according to Rymer,[1] to Thomas, Duke of Clarence. This was apparently the state crown of Henry IV. Each pinnacle, we learn, was set with six pearls, two sapphires, and a square balas, while one fleur-de-lis, of which a specification is given, was even more heavily jewelled. To the Mayor of Norwich and others went a circle of gold set with fifty-six balases, forty sapphires, eight diamonds, and forty-seven great pearls, and valued at £800. The number of the stones suggests that the crown had eight ornaments, one being slightly different from the other seven, and the crown in question may be the old Plantagenet 'great crown', with its cross and seven fleurs-de-lis. It was redeemed in the following reign, and handed over to the abbot of Westminster in part payment to redeem the remaining crown pledged by Henry. This last is described as the crown of King Richard, and may be the special long-pointed one of the portraits. It was redeemed in 1429.

Henry VI was an infant in arms at his accession, and the crowns were not taken out of pawn till he was old enough for a ceremonial coronation. A Cotton MS. quoted by Taylor in the *Glory of Regality* says that his state crown was made specially for the occasion. By this time, as we see from various contemporary sources, the imperial crown was in fashion. Edward IV is shown in such a crown on his Great Seal, and we read that he added to the imperial crown a very fine jewel from the mitre of George Neville, archbishop of York. Henry VII, whose title to the throne was none too secure, was crowned by Stanley, earl of Derby, on the battle-field of Bosworth with the helmet-crown of Richard III; and Polydore Vergil's description of the episode suggests that this was a piece of policy on Stanley's part to put the succession beyond question by declaring Henry a king elected and crowned by his people on the field. The actual crown of Richard is mentioned in Henry's will, by which he dedicated to the shrine of St. Edward the Confessor the figure of an armed man, plated with gold and holding 'the crowne which it pleased God to geve us, with the victorie of our Ennemye at our furst felde; the which Ymage and Crowne we geve and bequethe to Almighty God, our blessed Lady Saint Mary, and Saint Edward King and Confessour'.[1]

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[1] *Foedera*, ix, 284.

With the reign of Henry VIII we get a really detailed description of the State crown, the more interesting as it does not entirely correspond with the crown as shown on coins and seals. By this time it had not four, but five crosses and as many fleurs-de-lis. In the latter were images, three of Christ, one of the Virgin and Child, and one of St. George. Each cross was mounted with a central sapphire, four balases, an emerald or another sapphire, and nine pearls, while each fleur-de-lis, in addition to the image on its central leaf, contained three balases, three pearls, and a pointed diamond. The 'great balace Brooken', presumably the Black Prince's ruby, was set in the first fleur-de-lis, and this, and not a cross, was worn in the centre of the crown, as is shown very clearly on the Great Seal of Elizabeth. It is doubtless because of the disproportionate size of this jewel that the specification mentions nineteen, not twenty, pearls among the adornments of the rim, as its long point would stretch downwards and encroach upon the line of the border.

From a description among the MSS. of this Society[2] we find that by the time of Edward VI the jewels in this crown had been slightly altered and augmented. Borders of pearls had been added to the fleurs-de-lis, and it is probable that the crown was now worn with a different flower in the front. The three images of Christ may have savoured too strongly of idolatry and superstition for the reformed church, and they are now described, accordingly, as figures of kings. This being so, the fleur-de-lis with the figure of the Virgin would be the most important, and would be expected to take the central place, as it certainly had done a century later, and the arches would be shifted round a few degrees so as to spring from it, instead of from its next neighbour but one.

This crown would be too heavy for the boy king to wear with any comfort, so it was set on his head for a moment only, after St. Edward's crown, and was then succeeded by a crown made purposely for the king. This is said to have been the small crown broken up in 1649, but it would be a mistake to think it had remained unused for over a century. The description of it shows that at the time of its destruction it contained a diamond worth £200, a sapphire worth £60, and, apparently, the Black Prince's ruby, and it can hardly be assumed that Queen Elizabeth allowed those three jewels to stay in a disused crown through-

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[1] Will of Henry VII, cited by G. Gilbert Scott, *Gleanings from Westminster Abbey*, 139.

[2] MS. 129, f. 7.

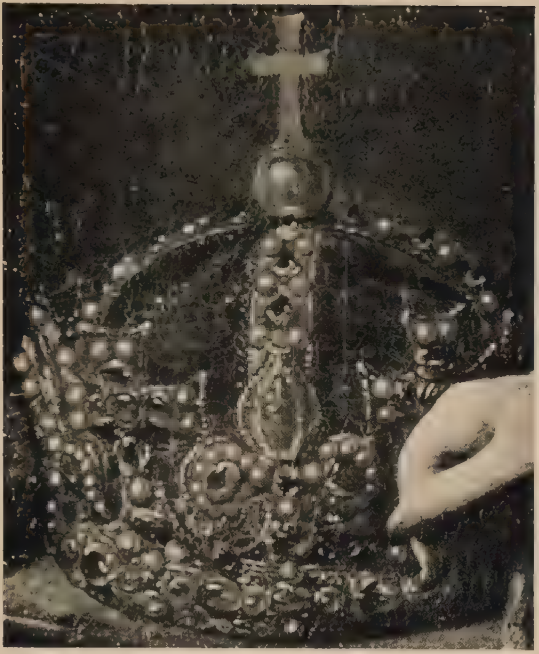

Fig. 1. Crown from the portrait of Charles I by Daniel Mytens
(*By kind permission of the National Portrait Gallery*)

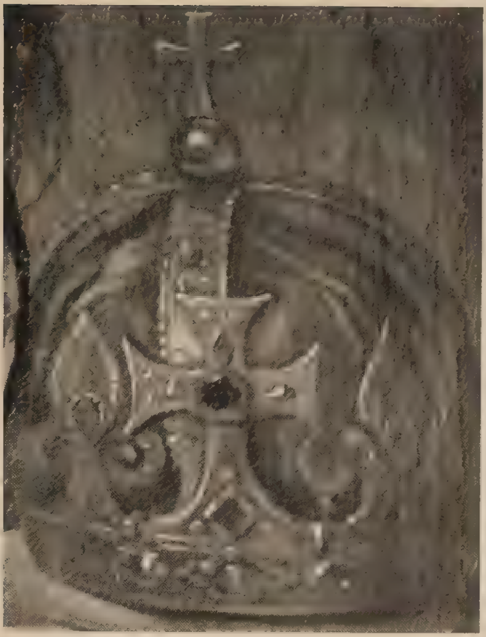

Fig. 2. Back view of the crown, from the portrait of Charles I by Van Dyck
(*By kind permission of the National Portrait Gallery*)

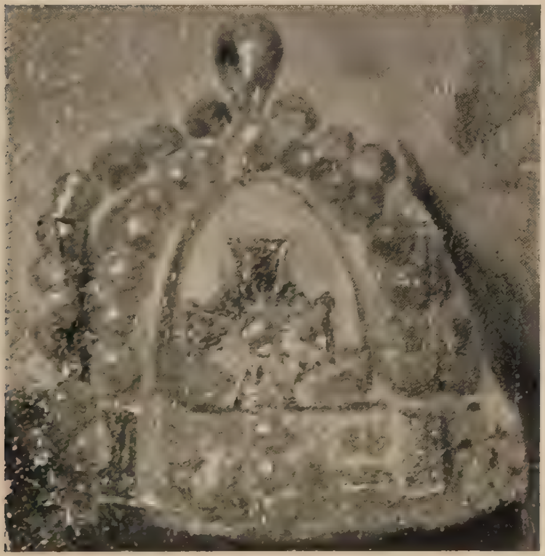

Fig. 3. Crown from the portrait of Henrietta Maria, by Van Dyck
(*By kind permission of the National Portrait Gallery*)

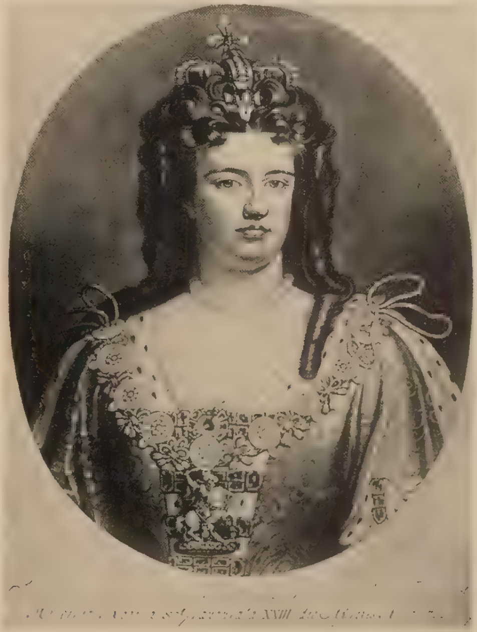

Fig. 4. Queen Anne, from an engraving after Kneller, in the possession of the Honourable Corps of Gentlemen-at-Arms

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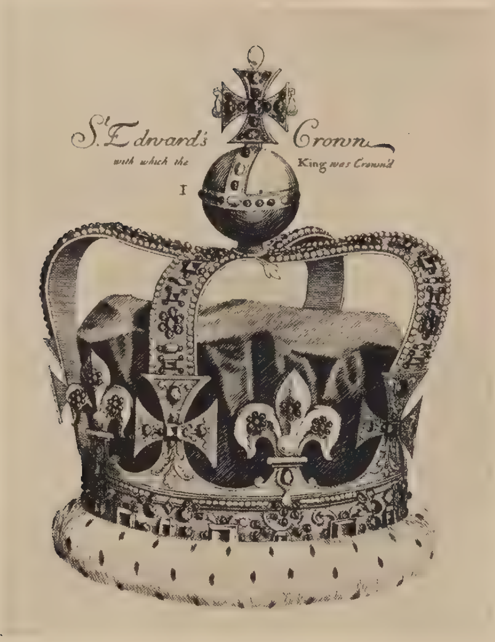
S.t Edward's Crown
with which the King was Crown'd
I

Fig. 1

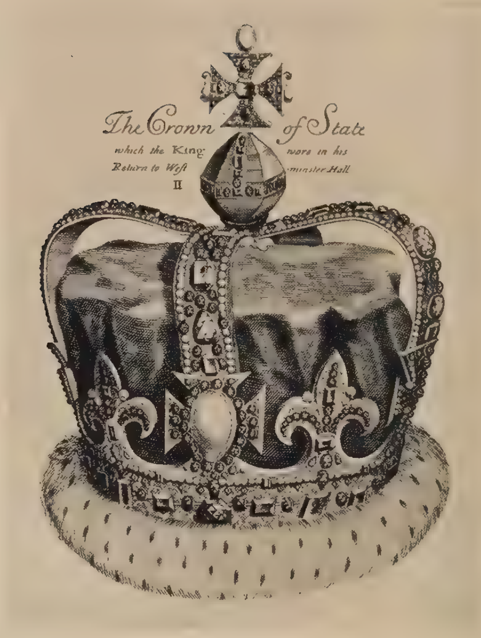
The Crown of State
which the King wore in his
Return to West minster Hall
II

Fig. 2

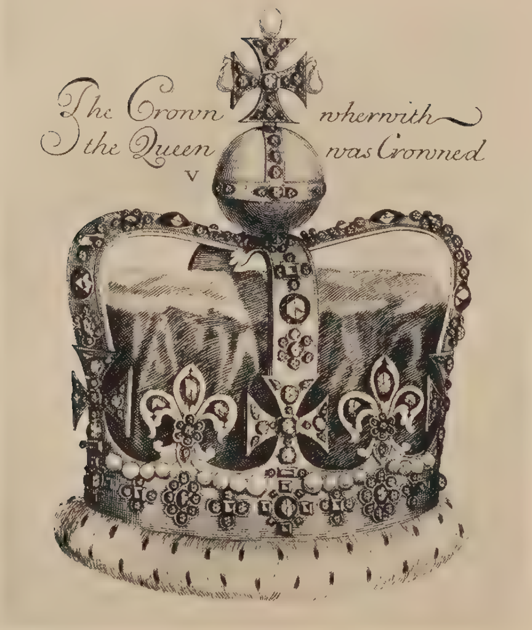
The Crown wherwith
the Queen was Crowned
V

Fig. 3

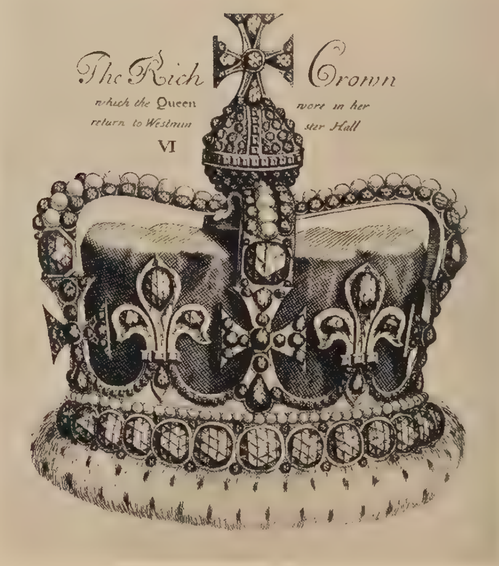
The Rich Crown
which the Queen wore in her
return to Westmin ster Hall
VI

Fig. 4

The crowns of James II and Mary of Modena. From Sandford's *Coronation of King James II*

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out her reign. Mary and she were crowned, each of them, with three crowns, for the same reason as Edward had been. Henry VIII's crown was heavy and probably uncomfortable, so instead of changing to a crown of State after the ceremony, they had theirs put on at the earliest opportunity, after St. Edward's and the State crown had been put on and at once removed. A small crown, with rather high arches set with pearls, is to be seen in more than one portrait of Elizabeth, and this crown of hers is probably the crown described among the jewels of James I. It had large diamonds between knots of pearls upon the rim; rubies, emeralds, and pearls upon the upper bars, and above them all the Black Prince's ruby surmounted by a cross of blue enamel. The ruby on the very top of the crown appears over the elaborate head-tires of Elizabeth in the Ditchley portrait of her; and the same crown, in the form in which it is described in the Parliamentary list, can be seen in Van Dyck's portrait of Henrietta Maria in the National Portrait Gallery (pl. xvi, fig. 3).

With the accession of Charles I we at last come to a trustworthy representation of the State crown. This was the crown that Charles wore at the opening of Parliament, before he had been formally anointed and crowned. He shifted it on his head and complained of its discomfort—a fact afterwards remembered as ominous. The portrait of the king by Daniel Mytens, in the National Portrait Gallery, shows him standing by a table on which is a crown corresponding in almost every particular with the Tudor crown described in the earlier inventories (pl. xvi, fig. 1). In the uppermost leaf of the central fleur-de-lis can be seen the figures of the Virgin and Child; below them is a diamond surrounded by three pearls, and the other three stones—balases or sapphires—mentioned in connexion with each flower can be seen in each pearl-edged side leaf and in the base. The cross at the side can also be clearly seen, with its sapphire set between four balases, three pearls round another stone in the base and two more pearls in each of three arms. The closeness with which the flowers and crosses are packed around the rim shows that there are ten of them, instead of the eight generally associated with a two-arched crown, and on the arches themselves we can identify the pointed diamonds set between pairs of pearls, 'two in a troche', as the earlier document has it.

This shows that, except for the transference of the Black Prince's ruby to the smaller crown, little alteration had been made since the days of Henry VIII, but in later portraits we observe a significant change. Just as the figure of Christ, a century before, had been changed to 'a king' and deprived of the place of honour in the crown, so in Charles's reign the figure of the Virgin Mary was in turn withdrawn from that position. The grandson of the Catholic Mary Stuart, the husband of the Catholic Henrietta Maria, was all too liable to suspicion of 'Popish practices', and public feeling would run high against the thought of the king's being painted flaunting such an image in the forefront of his crown. In the portraits by Van Dyck, accordingly, the central unit is not a flower but a cross, set with jewels in the correct order, but curiously badly centred with the arch behind it. Such a blemish can be no mere vagary of the artist, but must have existed in the model before him, and the reason for it is, in fact, the simplest possible. We are looking at the *back* of the crown. The 'image' in the central flower has been tactfully turned away from us, and in its place we have an orthodox jewelled cross, while the cross and 'mound' at the intersection of the arches look the same from the back as from the front. The only point that shows up the trick is the artist's too faithful portrayal of the displacement of the arch. Probably the crown of Henry Tudor had to be made smaller for the coronation of his son and daughters, and needed no enlargement for James or Charles Stuart. Any reduction of the circumference would naturally be made at the back, where there would be least likelihood of the work being noticed, and it must have been some such reduction that drew the cross out of line with the central arch. This view of the crown occurs in more than one portrait, without variation, so it is probable that Van Dyck saw and sketched the crown on one occasion, and referred merely to the sketch when filling in the details of his portraits. The reversal could not have escaped the notice of the sitter, and must then be attributed not to carelessness but to design.

Now we come to the crowns as they were in 1649. A note in the minutes of this Society for the 21st April 1748 gives a valuation of the Crown Jewels copied by Aubrey from a note made at the time by Colonel Dove. At first sight it appears as if there were now only four crosses instead of five, and as many fleurs-de-lis, but a careful calculation of the jewels involved shows that the copyist has erroneously counted the first flower and cross as a flower alone, and the second as a cross alone.

The list shows certain interesting variations from the well-known schedule preserved among our MSS.[1] Dove's numbering of the pearls, 232, appears in the other list, but is crossed out, and the figure 168 substituted, though the valuation remains the same, £174. Dove's valuation of the diamonds is £120 less, but of the rubies and sapphires £37 and £6 more, respectively. His list incidentally kills the popular tradition that the Black Prince's ruby was sold for £4, as it shows that the price for rubies was from £3 to £6 (?) according to size. The pierced balas-ruby 'wrapt in paper by itself', mentioned as a £4 item in the official list, is obviously one of the ordinary jewels which happened at the time to be out of a setting. The large irregular balas was last heard of on the top of James I's crown, and seen in the Henrietta Maria portrait; and on looking through Dove's list we see that the small crown in the iron box, called Edward VI's crown, contained two rubies which together fetched £43. Here again, as in the valuation of the helmet-crown of Henry V, we find an item put in a lot with something else and a high price set upon the whole, and once more we meet with official reluctance to put a value on the individual two jewels. The £60 sapphire may be the square jewel surmounting the present State crown, for this is the famous stone from St. Edward's ring, taken from his finger by Abbot Laurence and reported, by legend, to have passed through the hands of St. John the Evangelist himself.

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[1] MS. 108, ff. 1–19.

Among the objects brought from the Abbey at this time were two crowns attributed to King Alfred and Queen Edith. The description of the first 'of gould wyerworke set with slight stones and two little bells' is well known. Another account, less familiar, is to be found in John Spelman's *Life of King Alfred*. Spelman says that the box containing this crown, in the treasury in Westminster cloisters, was inscribed 'Haec est principalior corona cum qua coronabantur Aelfredus, Edwardus et ceteri', and that the crown was 'of a very ancient work, with flowers adorned with stones of somewhat a plain setting'. He admits that he writes on hearsay, and that the crown would for his purpose be worth examining. It is to be regretted that even if he did examine it subsequently he has left us no further description of the relic which was regarded for centuries with such veneration, only at last to be 'totally broken and defaced'.

It is generally thought that, in consequence of this destruction, no medieval crowns of English manufacture have survived; but this is not exactly the case. On the head of the Charlemagne reliquary at Aachen is the silver-gilt crown with which Richard, son of John and brother of Henry III, was crowned King of the Romans in the thirteenth century; and a small crown in the cathedral treasury was once the bridal crown of Margaret Plantagenet, sister of Edward IV and wife of Charles the Bold, Duke of Burgundy. The arms of Burgundy and England are impaled on an enamelled escutcheon at the back of the crown, and round the edge runs the name of 'Margarita de York'.

Certain funeral crowns, also, are in the tombs in Westminster Abbey. That of Edward I has already been mentioned. Richard II and his queen had crowns of gilt copper which could, in the eighteenth century, be felt by those who put their hands through the side-apertures of the tomb, but had been removed by the time it was opened and investigated. Henry III and Edward III are almost certainly crowned, and the crown on the brows of the Confessor, presumably that substituted by Henry III for the original Saxon diadem, has remained undisturbed since James II had the saint's coffin enclosed in an outer chest after Keepe's depredations.

At the Restoration the Master of the Jewel House had to provide two Imperial crowns, one being that which serves to-day under the name of St. Edward's crown, and the other the crown of state. The drawings in Walker's coronation order of Charles II are heraldic rather than realistic; but Sandford, in his account of the coronation of James II, illustrates both St. Edward's crown and the state crown, in the latter of which the Black Prince's ruby, restored, we are not told how, to the crown jewels, can be plainly seen (pl. XVII, figs. 1 and 2). The orb on the top of the crown is one single aquamarine, and this and its cross are still kept in the Tower, but the empty frame of the crown is now the property of Lord Amherst of Hackney, and is exhibited in the London Museum (pl. XVIII, fig. 4). At the back can be seen the setting of the ruby, in front the socket of the great sapphire that remained with the Stuarts after their ejection till the Cardinal of York bequeathed it, in the eighteenth century, to George III.

The queen of James II was crowned with him, and likewise had two crowns, a coronation crown and a state crown. The latter resembles one now in the Tower (pl. XIX, fig. 1), but the coronation crown has gone. We may be able, however, to find out approximately where, and in what way, it went. The accounts show that the diamonds for St. Edward's crown and the queen's two crowns were hired for the occasion and sent back afterwards. The crown of state, being used by the king in Parliament, was kept set and adorned, so it must have been this, not St. Edward's crown, that was exhibited to visitors in the Tower and was so nearly stolen by Colonel Blood. William III, according to Evelyn, wore the state crown in Parliament six weeks before his coronation, and the other three crowns were re-jewelled, the Black Prince's ruby being set in Queen Mary's crown. The frame of the king's state crown was altered from a circle to an oval, and a new cross was made for the top. Mr. E. Alfred Jones, in the appendix to his book on the Royal Plate in the Tower, has reprinted certain extracts from the Lord Chamberlain's Books at the Record Office, which show us the various changes made at coronation-time. It was apparently the custom to take out the coloured stones and set the crowns with diamonds and pearls only for the coronation; and the accounts, by giving the number and nature of the jewels concerned, help us to identify the crowns used on each occasion. Strype, for instance, tells us, on the authority of Mr. Edwards of the Jewel House,[1] that the state crown was too heavy for Queen Anne, and was taken to pieces and made fit for her. The accounts, however, show that this is not quite correct, and that the crown that was remade was not that of Charles II, but the 'Mary of Modena' crown, as the specification mentions the row of

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[1] Strype's informant appears to have been the son of the old man who was assaulted by Colonel Blood in his raid upon the Jewel House.

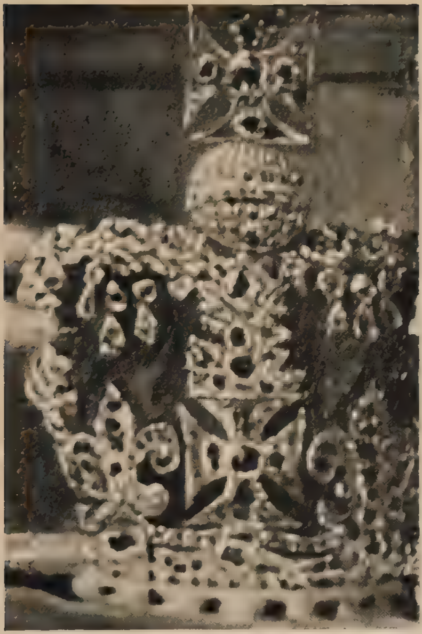

Fig. 1. Crown from the portrait of Queen Charlotte in the style of Allan Ramsay
(*By kind permission of the National Portrait Gallery*)

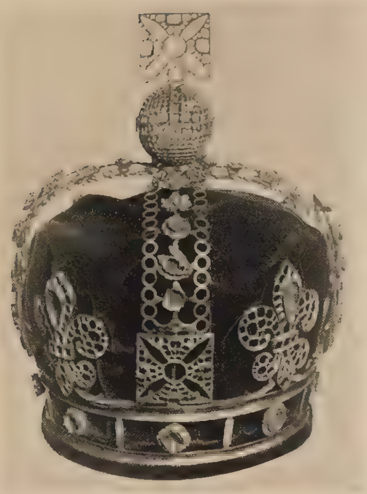

Fig. 2. Frame of the foregoing, as worn by Queen Adelaide. Lent by Lord Amherst of Hackney to the London Museum

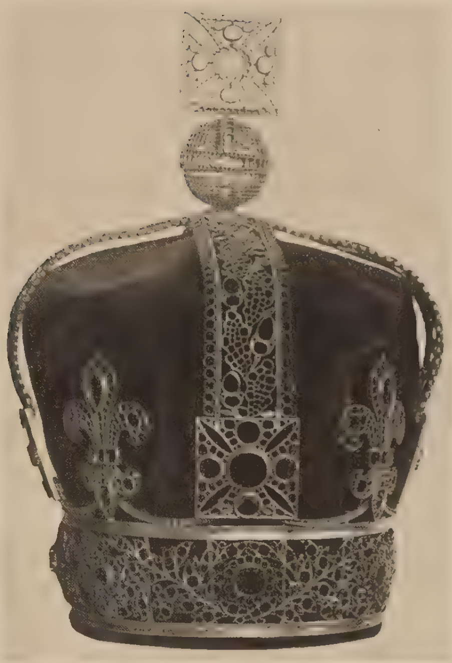

Fig. 3. Frame of the crown made for George IV. Lent by Lord Amherst of Hackney to the London Museum

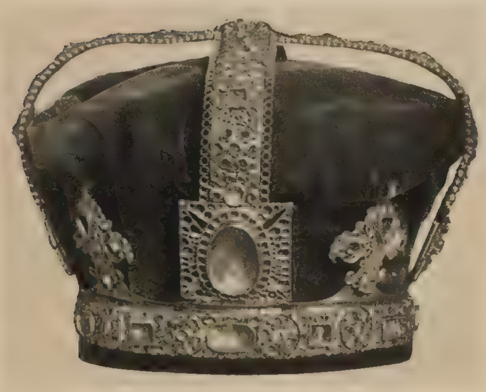

Fig. 4. Frame of the State Crown of Charles II. Lent by Lord Amherst of Hackney to the London Museum

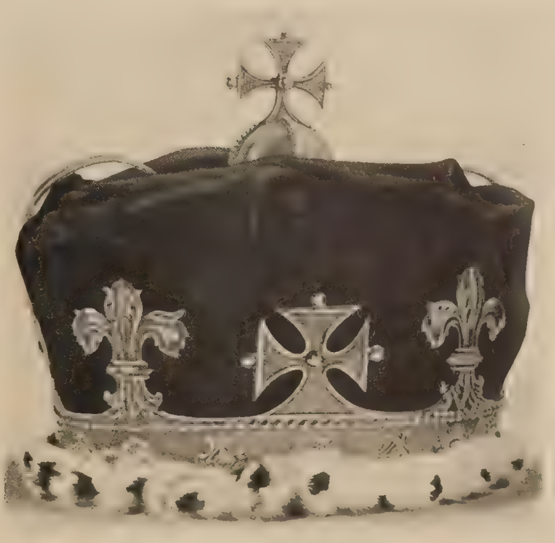

Fig. 5. The Prince of Wales's Crown, probably made for Frederick Louis, son of George II. In the Tower of London

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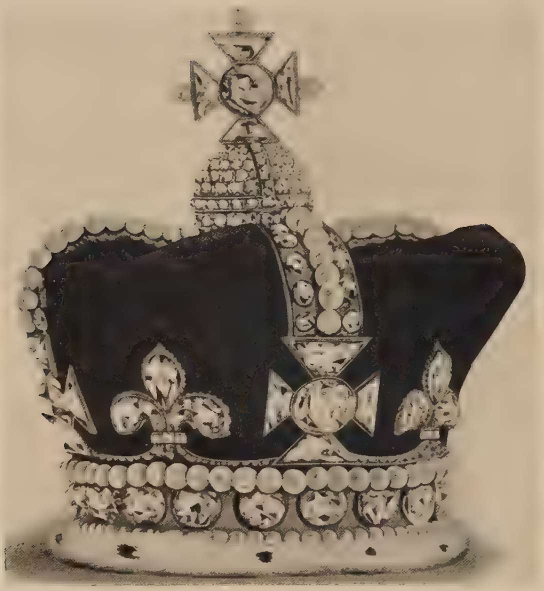

Fig. 1. Queen Anne's crown (called Mary of Modena's), in the Tower of London

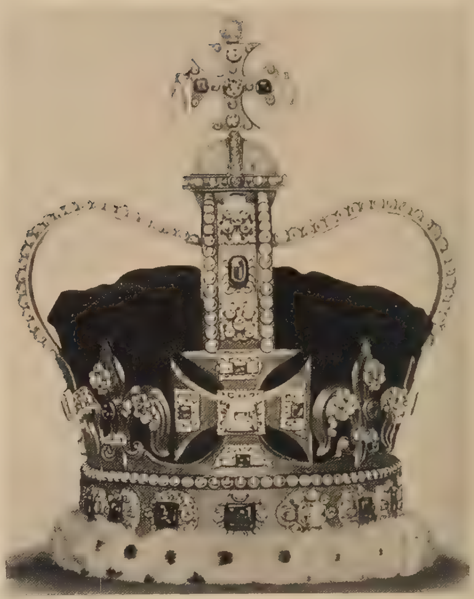

Fig. 2. St. Edward's crown (1661), in the Tower of London

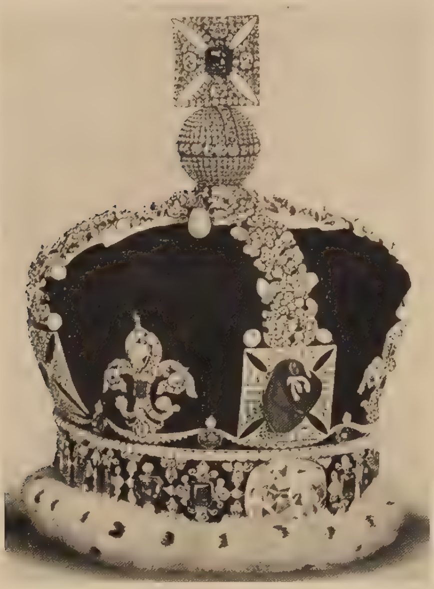

Fig. 3. The crown of State (1838), in the Tower of London

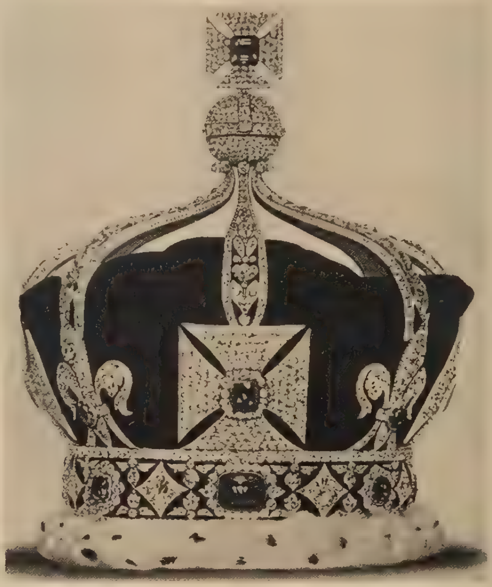

Fig. 4. Crown made for the Delhi Durbar of King George V (1911), in the Tower of London

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large diamonds round the rim and the supplying of a new gold frame, whereas the frame of Lord Amherst's crown is of silver.

The mention of a new frame, and the frequency with which the jewels were renewed, suggests that there is little but its general design to connect this crown, as it is at present, with that originally made for Mary of Modena, but the very frequency of the alterations made to it indicates the importance of its position among the Crown Jewels of the time. In the reign of William and Mary the Black Prince's ruby had been set in it, by way of emphasizing the importance of a queen who was no consort but her husband's equal and partner in the honours and responsibilities of kingship. Anne, as we have seen, wore it as her state crown, and it is just recognizable, ruby and all, behind her piled-up coiffure in her portrait (pl. xvi, fig. 4), and it appears once more at the coronation of her successor. Again we find, in the specification, mention of the hire of large diamonds for the rim: three large diamonds for each of the fleurs-de-lis, and one large and four medium diamonds for each cross. It is hard to say for certain why George I used this crown, and not the crown of William III and his predecessors. Probably the full-bottomed wig of the time had room behind its front row of curls for nothing larger than the five-inch crown made for a woman. This would explain why the Prince of Wales, on the same occasion, wore a crown which, from its description, seems to have been the coronation crown of Mary of Modena (pl. xvii, fig. 3).

Then this fourth crown vanishes for a time. The regalia were now being shown at the Tower as a matter of course, and Strype gives the printed catalogue obtainable in 1720. It includes three crowns only, and is incorrect about two of them. Its first statement, that no. 1 is 'the Imperial Crown, which all the kings of England have been crowned with ever since Edward the Confessor's time', is contradicted in eighteenth-century guide-books, which point out that it was first used in 1661. Then it describes the queen's crown as the 'Coronation Crown made for the late Queen Mary', whereas it is not the coronation crown, but the crown of state, and was not made for Mary II but for Anne, or, if one prefers to call it so, for Mary of Modena, but supplied since then with new jewels and a new setting. The description of the king's crown of state, after these two, is surprisingly accurate.

At the next coronation a queen was crowned, and there was no Prince of Wales present. Now appears for the first time a mention of 'The Queen's Lesser Crown'. This sounds like something different from the crown her husband had worn when he was Prince of Wales, and it is probable that a new crown was made for her. The crown in her portrait in the National Portrait Gallery is merely conventional, and corresponds to nothing in any of the earlier or later records, and the new crown was probably that which appears later in the portrait of Queen Charlotte (pl. XVIII, fig. 1). The old Prince of Wales's crown, the coronation crown of Mary of Modena, would be spoiled of its stones for the new jewel, and when Frederick Louis was in due course created Prince of Wales his crown was that of plain gold, with a single arch, which is still in the Tower (pl. XVIII, fig. 5). Guide-books of 1753 mention this crown as being kept with the regalia, and say how it was set before the prince's seat when he attended Parliament.

By the time of the coronation of George III and Queen Charlotte it appears that the queen was crowned with the so-called 'Mary of Modena' crown, and that her crown of state was the elaborately jewelled crown, of which the frame is now in the London Museum, on loan from Lord Amherst of Hackney (pl. XVIII, fig. 2). The king's state crown is the old Charles II one, with the great ruby in front and the cross set on the single aquamarine. It suffered severely in the early nineteenth century, when a madwoman put her hands through the grating at the Tower and wrenched open the arches at the top of it, but Taylor, describing it in 1820, says that it was 'profusely covered with pearls, diamonds, and other jewels'.

After its use by George III at his coronation, St. Edward's crown remained unused for nearly a century and a half. George IV had a new Imperial crown made, of which Lord Amherst of Hackney now owns the frame. Haydon, the painter, was told in 1830 that the bill of Rundell and Bridge, who made the crown, came to £70,000, and that 'Lord Liverpool told the king he could not sanction such an expenditure. Rundell charged £7,000 for the loan, and as some time elapsed before it was decided whether the crown should be bought or not, Rundell charged £3,000 or £4,000 more for the interval.' That was the version current some ten years after the event, but clearly Haydon did not know that it had been customary to hire diamonds for the coronation ever since the days of James II, and that an extension of the loan-period to cover an opening of Parliament had been granted in the reign of Anne.

Sir George Nayler's records of George IV's coronation put it beyond doubt that the Imperial crown was used throughout, though on some other occasions the king seems to have used the state crown, and had the Stuart sapphire set in it. William IV used the new Imperial crown, and Queen Adelaide the small crown of Queen Charlotte and Queen Caroline. At the accession of Queen Victoria a new crown was made, set with jewels from the old one, and enriched with some new brilliants, pearls, and a fine sapphire. This was used throughout the ceremony, as St. Edward's crown might well be too heavy, and the queen's crown and circlet in the Tower were reported to be 'very small and in poor condition'. It is interesting to note that these crowns, made to perch on the towering coiffures of the seventeenth and eighteenth centuries, were found too small for the style of 1838, when the hair was dressed in a knot at the back and the crown was expected to rest actually on the head.

In the original form of the new crown, the Black Prince's ruby and the Stuart sapphire were both in front, and the crown was set in this fashion when it was used as a coronation crown by Edward VII, in whose reign it took on its present form, the sapphire being moved to the back of the crown to make room for one of the Cullinan diamonds, the lesser 'Star of Africa' (pl. XIX, fig. 3).

The last official crown made for a king of England is the Imperial crown of India, made for the Delhi Durbar of King George V. It is a crown of the old imperial form, with several arches, and is set with diamonds (pl. XIX, fig. 4).

One other crown is mentioned in history, though for a moment only. The development of the English crowns seems to have been broken off completely with the destruction of the regalia in 1649, yet there is a chance that the break may have been less complete than we imagine, and that the line was carried on by the almost forgotten crown of Cromwell. He never wore it in his lifetime, though he was invested as Protector with the sceptre and the purple robe; but he had thoughts of kingship, and is said to have had a crown made for himself in 1656, and when, two years later, he lay in effigy at Somerset House, with the orb and sceptre in his hands, an imperial crown of gold and jewels lay on the cushion of his chair of state. His escutcheons of arms were surmounted with crowns, like the arms of a king, and when the effigy was exhibited in a standing position, and when it was carried on the coffin at his burial, the crown was actually upon its head. We do not know where this crown came from (it does not appear among the funeral 'properties' made for the occasion), but it is not impossible that the Protector had bought in some of the material and jewels of the broken regalia, even as he took over a college organ for his private enjoyment. Also, the last news of the effigy is significant. It lay in state for some time in the Abbey, but had to be removed to preserve it from what a contemporary biographer calls 'a threatening Multitude of the rascally People', and was taken to the Jewel Office in Whitehall, from a window of which it was hung out, with a rope round its neck, in the reign of Charles II.[1] It had been stripped of its royal ornaments inside the Jewel Office, and it would not be unnatural for that office to incorporate the material in the crown of St. Edward which had to be provided for the new king. It may be in this way that the Black Prince's ruby and the Confessor's sapphire came back to the Crown Jewels, and we may be allowed, perhaps, to conjecture that in association with them King Charles recovered the material, at least, of one of the old royal crowns of England.

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[1] *The Publick Intelligencer*, 14th June 1666.

ADDENDA

1. Blanche of Castile

The Wardrobe Account of 1299-30, quoted on pp. 77 and 78 above, is a list of 'remaining jewels which were the Lady Blanche of Spain's', and it may be asked, with some reason, what the 'great crown' is doing in such company. A possible explanation is provided by the position of affairs in 1216. In exasperation at the misrule of John, the rebel barons had offered the crown of England to Louis the Dauphin by virtue of his marriage with John's niece, Blanche of Castile. At the time of John's death, London and its treasures were actually in the hands of Louis, and Blanche was supporting him at Calais. The 'great crown' was in safe keeping in Dorset, but the 'London' crown, and any others there might be, must have fallen into the hands of Louis, coming back to the treasury of England on the death of Blanche in 1252. Half a century later the four crowns would be classed together as a matter of course, and the 'great crown' would be thought to have shared the fortune of the others and to have come back with them on the death of the king's cousin.

2. The Crown of Richard II

In Volume H of the City letter-books (cited by H. T. Riley, *Memorials of London and London Life,* 1868, p. 443) occurs an indenture of 1380, recording the deposit, by Richard II, of his crown and other jewels with the City of London as security for a loan. The crown is described in some detail as consisting of five large and five small 'flowers' set with spinels, emeralds, sapphires, diamonds, and large pearls. This description of alternating flowers corresponds with the type of crown already noted as being particularly associated with the portraits of Richard, and is the earliest mention of a ten-pointed crown, coming as it does more than a century before the description of the state crown of Henry VIII.

That it was one of the king's personal ornaments is proved by the existence, in the same letter-book, of a request from the king for the temporary return of the crown and other jewels for him to wear at his marriage.

This crown was pawned to the Abbot of Westminster by Henry V, and when it was redeemed, it was paid for with, apparently, the old 'great crown' and various other jewels as well, indicating that it must have been one of the most splendid of all the royal ornaments. It may, indeed, be wondered whether this ten-pointed crown, last heard of in the first years of Henry VI, was not eventually converted into the ten-limbed diadem of the Tudors and early Stuarts.

IV.—*An Ancient Box-Wood Casket*

By Philip Nelson, *Esq., M.D., F.S.A.*

Read 12th November 1936

The ancient box-wood casket of western origin which forms the subject of this paper measures 6 in. in length, 2¾ in. in width, and has a total height of 3½ in. It consists of two parts—the remarkably well-preserved box and its somewhat damaged lid; both are 'dug out' from the solid, not 'built up', as was the method employed in making contemporary ivory or bone caskets. The lower portion is brick-shaped, whilst the lid is ridged, somewhat like the roof of a house,[1] the gable-ends however being set back, as is the case with the earlier bone casket, of Anglo-Saxon workmanship, preserved in the Brunswick Museum.[2]

The lower half was acquired by the writer from Cheshire in 1921, whilst the lid,[3] now the property of the Convent of the Sacred Heart, Hammersmith,[4] was discovered at Uttoxeter, Staffordshire, more than a century ago. Within the lid is pasted a piece of paper, on which is written in a mid-Victorian script:

> 'This top of an ancient casket was found in a cottage in Uttoxeter, in the early part of this [nineteenth] century, by my grandmother, Ann Bootham.'
>
> (Signed) Margaret Howitt.[5]

Originally the two halves of the casket would be joined together by means of concealed hinges, in order to avoid any interference with the design. A century later, however, two brass hinges, chiselled with acanthus-leaf ornament, were substituted, the carvings being savagely cut into to allow for their attachment; of these additions only the lower half of one hinge now remains.

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[1] Derived from early sarcophagi.

[2] Longhurst, *English Ivories*, no. ii, 2, 67, 68; pls. 13, 14.

[3] The darker colour of the lid may possibly be due to its having been hidden in a chimney.

[4] Since the above paper was read, the lid of the casket has passed into the possession of the writer, and the 'Nelson casket', thus happily reconstituted, has been placed on loan in the Victoria and Albert Museum.

[5] Ann Bootham, *née* Wood, was born 1764, married 1796, and died 1848. Her daughter, Mary, was born at Coleford, Forest of Dean, 1799, whence the family removed, soon after her birth, to Uttoxeter. Mary Bootham married William Howitt, 1821, and their daughter Margaret was born 1839. The family later removed to Italy, William Howitt dying in Rome, 1879, and Mary, in the same city, 1888. In the following year Margaret Howitt published her mother's *Autobiography*. The lid of the casket was acquired, either by gift or purchase, by John Hungerford Pollen, whilst resident in Rome, whose widow subsequently gave it to the Convent of the Sacred Heart.

When purchased, there was riveted over the original lock space an oblong piece of sheet brass, a fifteenth-century replacement, whose splayed edges concealed the adjacent carvings. Upon the removal of this plate the heads of the ox and of the ass below and the cross upon the right were revealed. To the front of the lid was formerly attached a pendent hasp, which, falling into the slot on the left side of the lock, held the lid in position and secured the safety of the contents, perchance the Host or perhaps the relic of a saint.

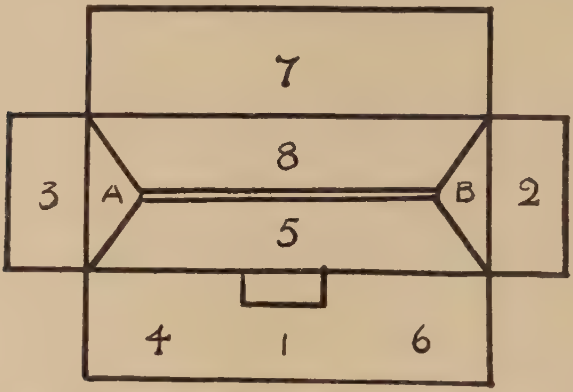

Fig. 1. Diagrammatic plan of the casket. The numbers refer to the description on pp. 92 to 99

As regards the carvings on the casket, all the figures are treated in high relief; with two exceptions they are clad in long tunics open at the neck and full cloaks; they are nimbed and have bare feet. The exceptions are two secular figures in 'The Entry into Jerusalem', who wear short tunics reaching to the knee.[1] Originally the eyes of all the figures were inlaid with black beads, of jet or of glass, making their expression much more life-like; few of these beads have, however, survived the ravages of time.

The several subjects carved upon the casket all relate to incidents from the life of Christ, and their relative positions are set out on the accompanying plan.[2]

The scenes are as follows:

1. *The Nativity* (pl. xx, fig. 1)

The nimbed and swaddled Child, who lies in a trough, facing to the right, occupies a central and important position beneath the lock; above Him are the heads of the ox and of the ass.

This treatment of the Nativity is clearly derived from the Gospel of pseudo-Matthew, chapter xiv:[3]

> 'Now on the third day after the nativity of our Lord Jesus Christ, the most blessed Mary went out of the cave, and, entering a stable, put her child in a manger,[4] and the ox and ass adored him. Then was fulfilled that which was spoken by Isaiah the prophet, who said, The ox doth know his owner, and the ass his master's crib.[5] The very animals,

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[1] Compare the dress in the same scene in the Benedictional of St. Ethelwold.

[2] The front, with its three scenes, may be contrasted with that of the Franks Casket, which has two, one secular, the other sacred.

[3] *The Apocryphal Gospels*, ed. Harris Cowper, pp. 53, 54.

[4] Luke ii. 7.

[5] Isaiah i. 3.

therefore, ox and ass, having him between them, incessantly adored him. Then was fulfilled that which was spoken by Habakkuk the prophet, who said, Between two animals thou art made known.'[1]

The prominence given to the Child is paralleled by the Anglo-Saxon morse-ivory carving in the Mayer collection, Liverpool Public Museum,[2] and also by the miniature in the Benedictional of St. Ethelwold, *c.* A.D. 980.

2. *The Baptism of Christ* (pl. XXI, fig. 3, *a*)

This incident is treated in a most unusual manner. Our Lord, who is represented as a child, is immersed up to the waist in a deep cup-shaped font. The font, which rests upon an elaborate base, has an out-curled lip and is much ribbed, the motif being evidently derived from the flowing waters of the Jordan. To the left and right stand wingless figures, who should be respectively St. John Baptist and an angel, though more rarely their positions are reversed. The figure on the left holds a book above the head of Christ, whilst the other not only holds in his left hand the Saviour's garment, but from a ladle, held in his right, pours water upon the head of our Lord, who is thus baptized both by immersion and affusion.

The Hellenistic art of the catacombs and of the early sarcophagi shows us the baptism of Christ where He is portrayed as a child, not as a man. As a child, we find Christ being baptized on a Syrian ivory panel of the sixth century in the British Museum,[3] and also on a panel from the episcopal throne at Ravenna, *c.* A.D. 550, in both cases in the river Jordan. At a later date we meet with the substitution of a font for the river, an example of which is afforded by a Syrian ivory, of the eighth century, in the Victoria and Albert Museum, no. 257/1867.[4]

In the middle of the ninth century we also find the baptism so treated in the sacramentary of Drogo, bishop of Metz, A.D. 826–55. Finally we may cite a leaf from an ivory diptych in the British Museum,[5] *c.* A.D. 1000, on which the Precursor stands on the left of the font, and a winged angel, who holds the garment, on the right.

It may be noted that on the sixth-century ivory in the British Museum, previously mentioned, the Sacred Dove above the Saviour holds in its beak a shallow bowl, and possibly this explains the presence of the ladle on the casket, due to careless observation on the part of the copyist.

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[1] Habakkuk iii. 2. In the Greek version this wrongly reads: *ἐν μέσῳ δύο ζῴων γνωσθήσῃ*; the passage in the Vulgate is correctly translated from the original Hebrew, *In medio annorum notum facies*, 'In the midst of the years thou shalt make it known'. The mistranslation in the Greek version is due to the incorrect rendering Shᵉnaim שְׁנַיִם two, in place of Shānīm שָׁנִים years.*

[2] Longhurst, *English Ivories*, no. xiii, 13; pl. 19.

[3] Dalton, *Catalogue of the Ivory Carvings of the Christian Era in the British Museum*, no. 10.

[4] Longhurst, *Catalogue of Carvings in Ivory in the Victoria and Albert Museum*, i, pl. XI, 34.

[5] Dalton, *Catalogue of the Ivory Carvings of the Christian Era in the British Museum*, no. 53.

* **My thanks are due to the Rev. S. Frampton for this information.**

The scene is completed by the angel (B) carved on the end of the lid above. This, a half-length figure, faces to the left and, whilst holding a book in the left hand, gives his benediction with his right.[1]

During the earlier years of Christianity baptism was limited to adults, who were completely immersed in the piscina of the baptistry. Subsequently the rite was conferred upon babes soon after birth, when the child was immersed in a font. At a later date affusion was substituted, but for some time both methods would be observed.

On the casket the sacramental nature of the scene appears to be stressed.

3. *The Triumphal Entry into Jerusalem* (pl. XXI, fig. 3, *b*)

This, His second entry, took place on Palm Sunday, when He came riding on an ass's colt,[2] returning subsequently to Bethany.

Our Lord, on a prancing steed, is represented as riding astride, with His foot in a stirrup. Riding astride is an Hellenistic detail, which we find on the sarcophagus of Junius Bassus, A.D. 350, and later also in the Sacramentary of Drogo. The Saviour, who holds the knotted rein in His left hand, bestows His blessing, in the Latin manner, with His right. Before Him, in adoration, bend two secular figures, who, clad in short garments,[3] cast respectively a garment[4] and a palm-branch.[5] The branch, which curls behind and beyond our Lord, is evidently a branch of a willow, which on Palm Sunday was, in England, substituted for the true palm. The simple treatment of the subject, in which only three figures appear, is closely related to the representation on the sarcophagus of Junius Bassus, where a youth spreads his cloak, whilst above him another cuts a branch from a tree.

This scene, like the Baptism, is completed by the angel (A) on the lid, who holds a book in his left hand, whilst with his right he bestows his blessing.

4. *The Institution of the Eucharist* (pl. XX, fig. 1)

In the centre Christ elevates the chalice, which He holds in His right hand, whilst upon the right a standing figure bestows the benediction with his right hand, holding a book in his left. The figure on the left holds up a book in his right hand. It will be observed that there is no cross upon the nimbus of our Lord, possibly an omission on the part of the carver.

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[1] This figure is very similar in treatment to the angel over the Confessors in the Benedictional of St. Ethelwold.

[2] Mark xi. 2.

[3] As in the Benedictional of St. Ethelwold.

[4] Mark xi. 8.

[5] John xii. 13.

This scene, as was the case with the Baptism, is treated in a sacramental manner, the three participants being regarded as priest, deacon, and subdeacon.

5. *The Crucifixion* (pl. XXI, fig. 1)

Our Lord in crucifixions of the Hellenistic type is represented as a young man and as having no beard, whilst in works carried out under the influence of the Greek cities of Asia Minor, e.g. Antioch, as having long hair. An example of this type may be seen on an ivory panel of the fifth century in the British Museum, no. 292.[1] On Carolingian ivories and miniatures of the ninth and tenth centuries we find our Lord still depicted as beardless, but as more fully draped.

On the casket, Christ, who hangs upon a low cross, is still alive and has His eyes open. He wears a full loin-cloth, which has a large central loop. On either side of the central cross are four figures: those on the left, having square-cut openings at the neck, are female; those on the right are male. The four holy women are: the Blessed Virgin,[2] lifting the cloak, which covers her head, in grief to her eyes with her left hand; the Magdalen;[3] Mary, the wife of Cleophas;[3] and last the seated Salome,[3] the wife of Zebedee.[4] On the right are Stephaton with a hyssop,[5] St. John the Divine,[6] and no doubt the centurion[7] and Longinus.[8] In the upper corners are two horizontal flying angels, each holding a book; the near wing of each is carried down in front of the thigh, the other being disposed above the transom of the cross.

This arrangement of their wings is closely paralleled by the angels at Bradford-on-Avon, *c.* A.D. 1000, where the near wings are extended along the body, the farther ones being flexed across their outstretched, veiled hands. This reversal of treatment was evidently the case in the single angel still preserved at Winterborne-Steepleton. The cross, placed between eight figures, in groups of four, and two flying angels, also occurs on an Anglo-Saxon morse-ivory panel, *c.* A.D. 950, preserved in the Cambridge Museum of Archaeology and Ethnology.[9] Figures of Longinus and Stephaton appear on the Anglo-Saxon pectoral cross of the eleventh century in the Victoria and Albert Museum.[10]

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[1] Dalton, *A Guide to the Early Christian and Byzantine Antiquities in the British Museum*, pl. II.

[2] John xix. 25.

[3] Mark xv. 40.

[4] Matthew xx. 20.

[5] John xix. 29, 'and they filled a spunge with vinegar and put it upon hyssop'.

[6] John xix. 26.

[7] Matthew xxvii. 54.

[8] John xix. 34.

[9] Longhurst, *English Ivories*, no. vii, 71, 72, pl. 15.

[10] *Ibid.* vi, 6, pl. 15.

6. *The Appearance to the Magdalen* (pl. xx, fig. 1)[1]

This occurrence is alone treated at any length, in the New Testament, in the Gospel of St. John.[2]

On the casket, the Saviour stands holding in His right hand a short cross. Beside Him stands the Magdalen, wrapped in a full cloak, for protection against the cold morning air,[3] as, with both hands outstretched, she bends before Him. Behind St. Mary stands St. John the Divine, who holds in his left hand his emblem, a palm-branch.

Again we may remark upon the absence of a cross from the nimbus of Christ, but this may be paralleled by several early ivories. The earliest, from the episcopal throne at Ravenna, depicts Christ with the woman of Samaria, in which He holds a short cross, but no cross appears on His nimbus.[4] On two seventh-century ivories, formerly in the Bateman Collection,[5] in the scenes 'Christ with the woman of Samaria' and 'Christ healing the paralytic', He is represented as holding a short cross, but is not nimbed. The last example occurs on a ninth-century pyx (a copy from a Syrian original of the sixth century) in the British Museum.[6] On this, Christ, who is healing the demoniac, is not nimbed, but carries a short cross. The cross is also omitted from the nimbus of Christ in Limbo, a stone carving in the Canons' vestry at Bristol, *c.* 1050.

As the scene on the casket is subsequent to the Resurrection, the cross may be regarded as the Resurrection-cross.

The inclusion of St. John in this scene is probably due to the early belief that St. John the Divine was the husband of the Magdalen. Mrs. Jameson writes:[7]

'There is an old Greek tradition, that the Marriage at Cana was that of St. John the Evangelist. In the thirteenth century it was a popular article of belief that the marriage which Jesus graced by His presence was that of John the Evangelist and Mary Magdalen.' It is curious to note that the marriage at Cana, which was attended by the Blessed Virgin, is recorded only by St. John,[8] who was her nephew. Here one may remark that the Gospel of St. John was written at Ephesus, where St. Mary Magdalen also resided and from whence her relics were subsequently translated to Constantinople, A.D. 886.

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[1] The Magdalen also occurs on the Ruthwell cross.

[2] John xx. 14–17.

[3] John xx. 1, 'cometh Mary Magdalene early, when it was yet dark, unto the sepulchre'.

[4] Dalton, *Byzantine Art*, fig. 123.

[5] Sotheby's Sale Catalogue, 1893, lot 29, pl. ii.

[6] Dalton, *Catalogue of the Ivory Carvings of the Christian Era in the British Museum*, no. 43.

[7] Anna Jameson, *Legends of the Madonna*, 296.

[8] John ii. 1–11.

7. *The Ascension* (pl. xx, fig. 2)

The Hellenistic type of the Ascension depicted Christ climbing the slopes of the Mount of Olives, the Dextera Dei appearing from the clouds above. The subject was indeed treated as being in the nature of an apotheosis, with the Hand of God assisting the return of the Saviour, by grasping His outstretched wrist.

One of the earliest examples of this mode of portraying the Ascension occurs on a fifth-century ivory diptych at Munich, in which scene the Manus Dei grasps the right wrist of Christ. In a miniature in the Sacramentary of Drogo is the Ascension, in which Christ is about to step off from the summit of the Mount, between two adoring angels. He carries the Resurrection-cross over His left shoulder, behind which flutters drapery, whilst His right wrist is grasped from the clouds. The Codex Egberti, *c.* A.D. 990, shows us Christ, now within a vesica, with His wrist grasped by the Father; in the Benedictional of St. Ethelwold, however, Christ, within a vesica, merely extends His right hand towards the Dextera Dei. About this time we find that the mount has disappeared and that our Lord, within a vesica, ascends between two angels, carrying the Resurrection-cross in His left hand, His right hand extended above Him. The scene is so treated on the ivory book-cover in the John Rylands Library (ex Bateman and Crawford collections), and here the wrist of Christ is grasped by the Father. A similar treatment occurs on the tenth-century ivory in the British Museum.[1]

By the end of the eleventh century Christ was represented as ascending vertically between two angels, but His hand was no longer grasped from above.

The angelic figures which support the vesica, both in the Ascension and in the Last Judgement scenes, have undergone a considerable degree of evolution since their first appearance in Roman art. They began as small winged figures, 'erotes', who held up, within a circle, the representation of the deceased, or the framed inscription on the early sarcophagi. Soon they were enlarged and, clad in long floating tunics, supported the cross within a garland, as we see on the ivory book-cover of the sixth century in the museum at Ravenna. Later the full-faced, half-figure of Christ replaces the cross, and finally, as on the casket, they accompany our Lord in His Ascension. This scene is treated on the casket thus:

In the centre, facing to the right, within a vesica, between two large winged angels,[2] is the ascending figure of Christ. He holds a cross-staff over his left shoulder, behind which flutters drapery, whilst His outstretched right wrist is grasped by the Manus Dei, which emerges from the clouds above. Our Lord's right hand is supported by the extended left hand of the facing angel, who thus appears to take a very active part in His uplifting, a remarkable feature for which no parallel has as yet come to light. The angel behind Christ points to the skies with his right hand.[1] The drapery, falling from the shoulders of all three figures, has that angular disposition which we find in the earlier part of the Bodleian Cædmon, an Anglo-Saxon MS. *c.* A.D. 1015.[2]

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[1] Dalton, *Catalogue of the Ivory Carvings of the Christian Era in the British Museum*, no. 48.

[2] Compare the two angels *vis-à-vis* immediately above the last six apostles in the Benedictional of St. Ethelwold.

8. *The Last Judgement* (pl. XXI, fig. 2)

As is well known, following upon the conversion of Constantine the Great to the Christian faith (A.D. 311), the several sacred sites in the Holy Land were suitably commemorated by the erection thereon of sumptuous shrines. The exteriors of these various buildings were later enriched with magnificent mosaics, appropriate to the event to which the individual church was dedicated.

Upon the capture of Jerusalem, A.D. 614, by Sarbar, the commander of the forces of Chosroes II, king of Persia, these mosaics perished, and all knowledge of their designs would have been lost, had they not been engraved upon the ampullæ, now preserved at Monza. These sixteen leaden vessels, which formerly contained oil from the sanctuary-lamps and were a gift to Theodelinda, queen of the Lombards, *c.* A.D. 600, give us, in a somewhat sketchy manner, the general design of these lost mosaics, whose treatment was largely Syrian in character.

Among these votive churches, one of the most important was the church of the Ascension, on the Mount of Olives. On the façade of this building was a mosaic of the Ascension, *c.* A.D. 450, which represented our Lord as seated within a vesica, uplifted by four nimbed and flying angels, and it was no doubt from this source that the Majesty, carved on the lid of the casket, was ultimately derived.[3] It would appear probable that the inspiration for this treatment of the Ascension at Jerusalem may be derived from Matthew xxv. 31, 'When the Son of Man shall come in His glory, and all the holy angels with Him, then shall He sit upon the throne of His glory.' Here, however, the scene no longer represents the Ascension, which, as we have already observed, is carved beneath (no. 7), but has become the final scene, 'The Last Judgement', which is thus portrayed:

In the centre, within a vesica, is our Lord in Majesty, holding in His

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[1] Acts i. 9–12.

[2] *Archaeologia*, xxiv, 329 ff.

[3] It also occurs on a reliquary-lid, from the Treasure of Sancta Sanctorum, now preserved in the Vatican Library.

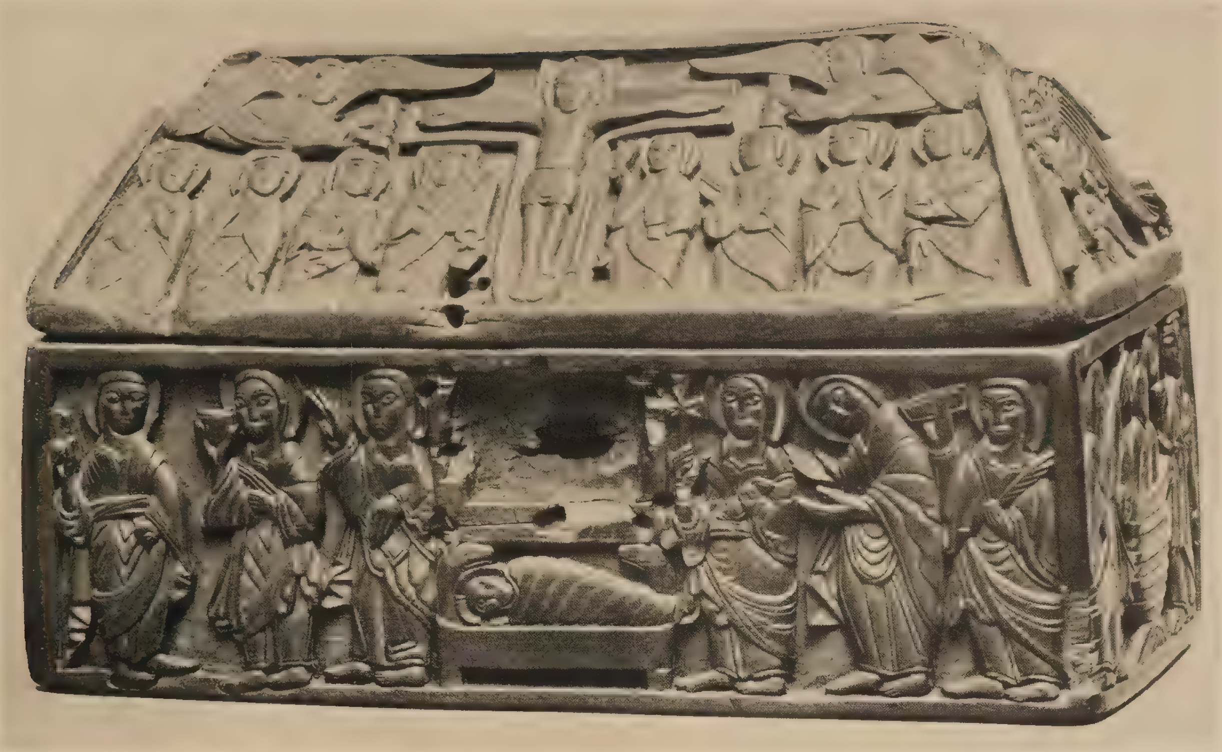

Fig. 1. Front of Casket

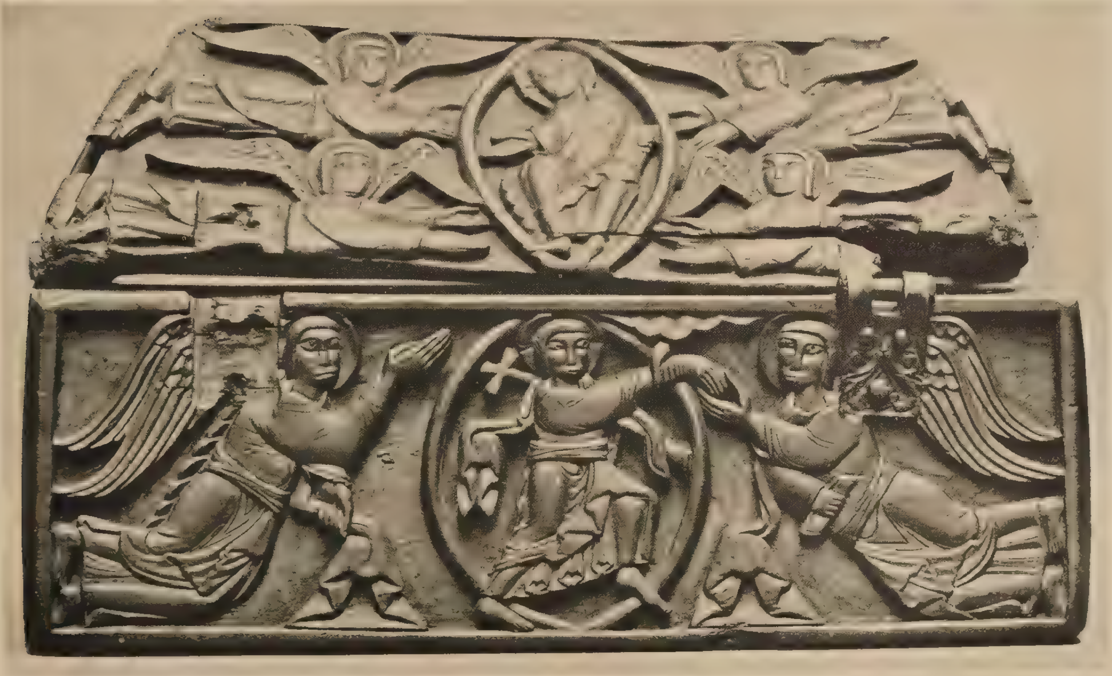

Fig. 2. Back of Casket

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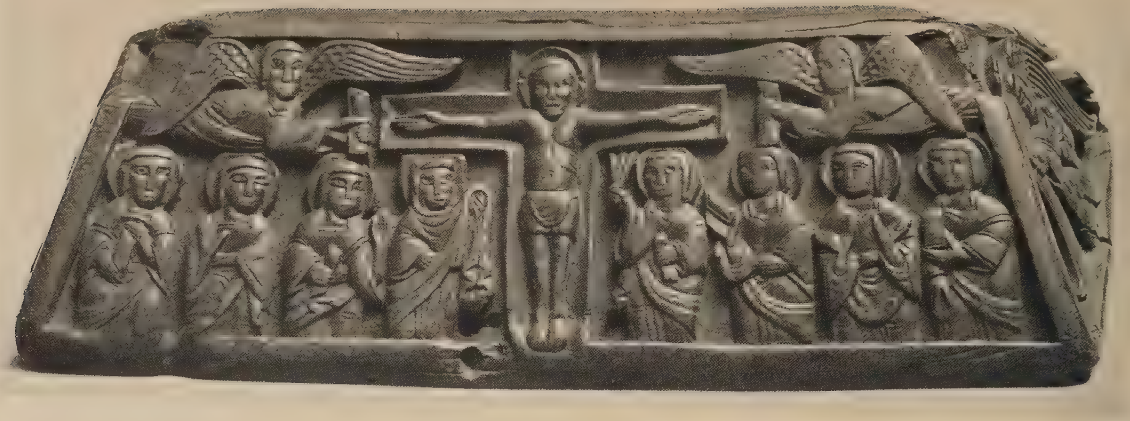


Fig. 1. Front of Lid

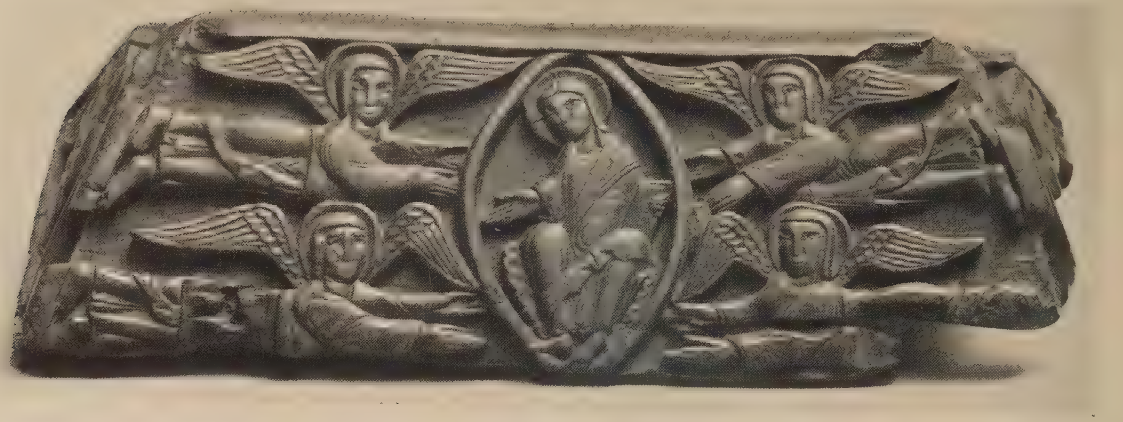
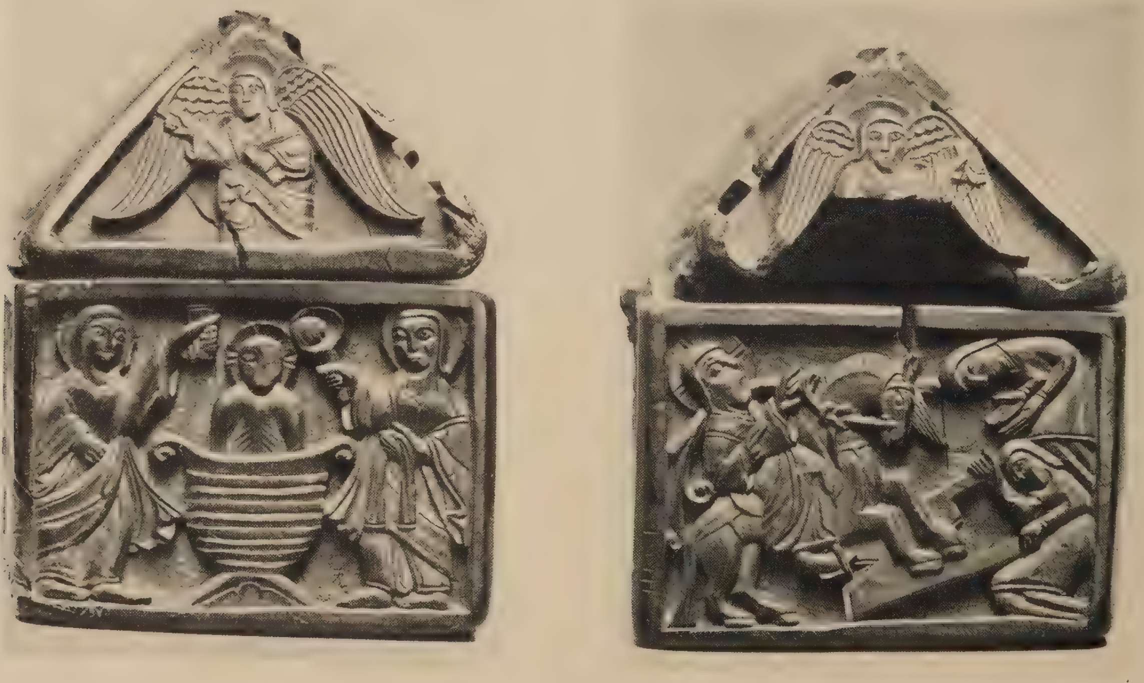


Fig. 2. Back of Lid



a

b

Fig. 3. Ends of Casket

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left hand a closed book, whilst His right hand is extended with open palm, His head being gently inclined to His right.

About the vesica are four angels, placed horizontally, whose wings are so disposed as happily to fill the available space. The wings of the upper pair are displayed parallel with their bodies, those of the lower, however, follow closely the position of the wings of the Bradford angels, in that their near wings are extended, while their farther ones are sharply flexed, thus reversing the attitude of the angels in the crucifixion carving.

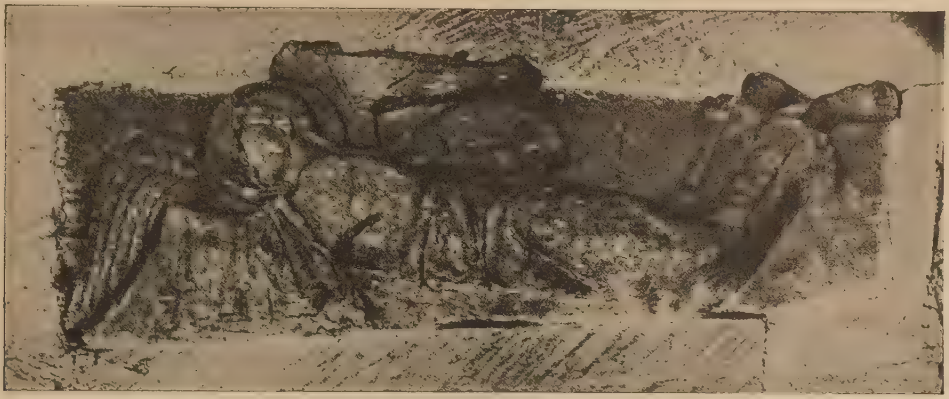


Fig. 2. Angel, Bradford-on-Avon, Wilts.

It is not impossible that the four angels, grouped about our Lord in Majesty, are the four angels of the winds, referred to in Revelation vii. 1, 'And after these things I saw four angels standing on the four corners of the earth, holding the four winds of the earth.'

The question of the provenance of this unique object must now be considered. May it be suggested that we have here a box-wood casket of Anglo-Saxon workmanship, inspired doubtless by an eastern model, either in ivory or in manuscript—an assumption which may find support from a consideration of the following points?

The casket is clearly a work executed in the manner of an ivory carving, but carried out in a land where elephant-ivory was hard to come by. This circumstance could suggest some atelier in England as its source, for of all the small Anglo-Saxon carvings which have survived, one only, a crozier-top, is executed in elephant-ivory.

In the description of the casket reference has been made to the numerous affinities which it presents to various art-objects of native origin, as to both its shape and details of design. Here mention may be made of the prominence given to the Nativity, the presence of the angels upon the gables, the relation of the flying angels to those at Bradford-on-Avon (fig. 2) and at Winterborne-Steepleton (fig. 3), and finally to the grouping of the eight figures about the cross.

The observer will doubtless have been struck by the fact that in all the scenes save two, only three figures appear, whilst, where possible, the design is treated in a manner bilaterally symmetrical, both as to action and the disposition of the draperies. As regards the position of the angels' wings in the scenes we have described, this is prescribed by exigencies of space, being flexed or extended as circumstances demand, and thus some deviation from the original source may ensue. Finally, may we venture to assign this casket to about A.D. 1020, and to suggest as its source some art-centre in the northern part of England—perchance, in view of the place of its discovery, Lichfield, for it lacks the airy grace and restless quality of works produced by the Winchester School?

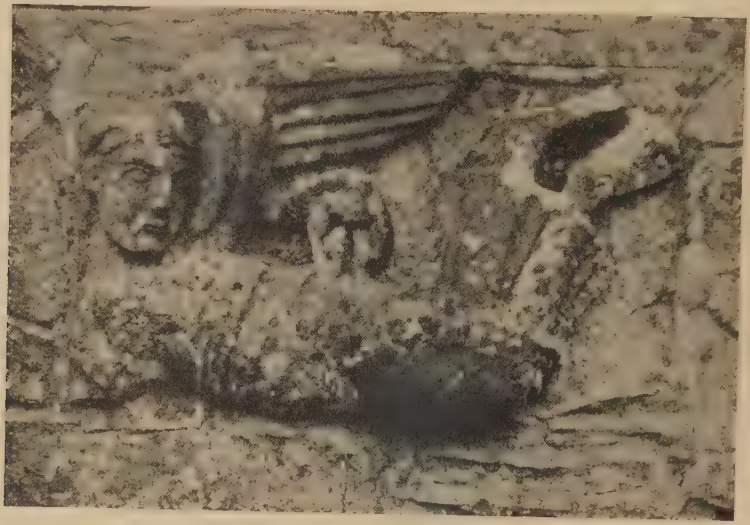


Fig. 3. Angel, Winterborne-Steepleton, Dorset

In conclusion, I desire to express my indebtedness to those who have given me much kind help in reference to the casket: to the Director of the Victoria and Albert Museum for permission to reproduce the photographs which illustrate these notes; to Mr. Arthur Gardner, F.S.A. and the Cambridge University Press, for the picture of the Bradford angel; to Mrs. Dobson, F.S.A., for that from Winterborne-Steepleton, and to the British Museum; to the Revd. Mother Superior of the Convent of the Sacred Heart, Hammersmith, for her permission to exhibit and publish the lid of the casket, and finally to Miss Margaret Longhurst, F.S.A., for her invaluable help during the preparation of this paper.

V.—*The Astrological Astrolabe of Queen Elizabeth*

By George H. Gabb, *Esq.*

Read 12th November 1936

Ten years ago, through the kindness of a member of the Wollaston family, I came into possession of a large circular plate apparently of bronze. It was much oxidized and begrimed, and had been preserved with the scientific instruments and other relics belonging to their illustrious ancestor Dr. William Hyde Wollaston, President of the Royal Society in 1816, who died in 1828.

It was obviously centuries old, and on the back of it, through the grime, could just be seen some fine engraving, while on the front, surrounded by a thick rim, were a series of engraved concentric circles.

By chemical means the oxide was carefully removed and the engraving cleared, when it became evident that I was in possession of an historical document of extraordinary interest, which, after some research, I was able to identify as the astrological astrolabe of Queen Elizabeth, with its finely designed scroll bracket, swivel, and suspension-ring, though the rete, alidade, and movable plate, on which was probably inscribed the name of the craftsman who wrought it, were missing. It is nearly 14 in. in diameter and was originally gilt, but only traces of this remain.

On the back (pl. xxii), in the centre, are engraved the arms of Queen Elizabeth, with the initial letters 'E. R.', surrounded by the Garter inscribed with the motto 'Hony soyt quy mal y pense', with the Tudor rose and portcullis, and under the arms in a rectangle are the usual surveying scales of 'Umbra Recta' and 'Umbra Versa'. The magnificent and complete manner in which the royal arms are emblazoned, surmounted by the crown, proclaims in no uncertain way the importance attached to the instrument, and indicates the personal association of Queen Elizabeth and her astrologer Dr. John Dee, who doubtless designed it for her; and the subtle significance of the royal arms being surrounded by the bodies of the celestial universe would not be lost on the acute mind of its royal owner.

There are fourteen concentric scales, inscribed with the names and symbols of the twelve signs of the zodiac, the days of the month, with the 'Mansions of Astrology', in which are planetary symbols and astrological terms such as 'Temperata torid fortunata', 'Mansio sicca infort', 'Temperata fortunata', all portending the good or baneful influences of the planets by their various positions in the zodiac. Their altitude would be found by measurements with the astrolabe; and by these means their supposed influence on the Queen's life and destiny could be interpreted.

As early as 1553, when Elizabeth was a girl of not yet twenty years, Dee corresponded with her. He cast her horoscope and, at the request of Robert Dudley, calculated by astrological means the day most auspicious for her coronation—14th January 1559—and from that time, throughout her long reign, till her death in 1603, he was her constant consultant and adviser; and who can say what momentous decisions may not have been based on the observations he made with this instrument?

I think it will be agreed that the back of no other astrolabe is comparable with this, as a superb example of the engraver's art of the sixteenth century, filled as it is with astrological terms and symbols, and divided with great precision, while as a human document in bronze of our greatest queen it certainly stands unrivalled. On the front, or mother, of the astrolabe is the rim divided into 360 degrees, for use in conjunction with the alidade. Inside the top of the rim is a cavity in which a projection on the missing movable plate fitted, to hold it in position.

In the time of the Commonwealth the instrument came into the hands of Henry Sutton, a well-known mathematical-instrument maker, who carried on his business 'in Threadneedle Street, neere the Royall Exchange'. He used the blank space of the mother for the construction of a spiral 'slide rule', signing it 'H. Sutton fecit 1655', and this is the earliest dated spiral 'slide rule' known (pl. XXIII).

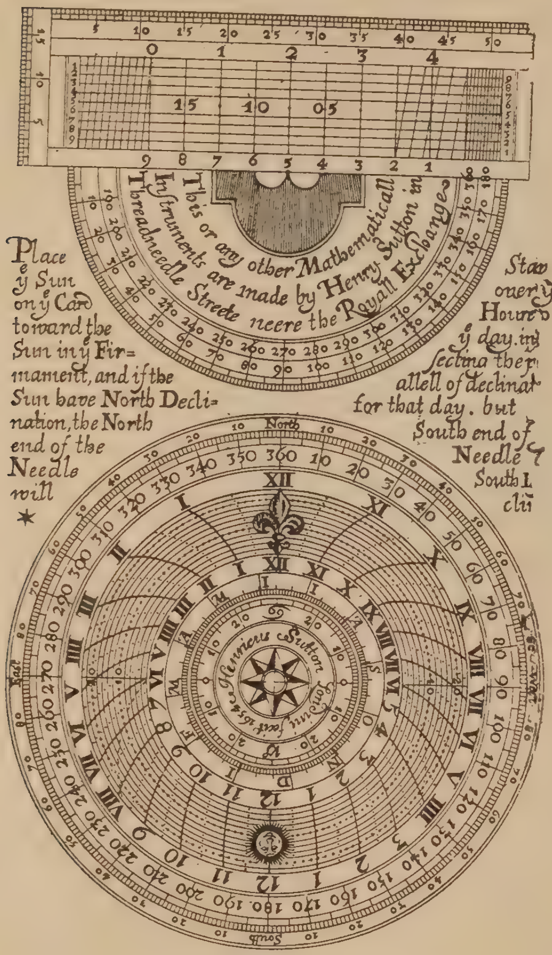
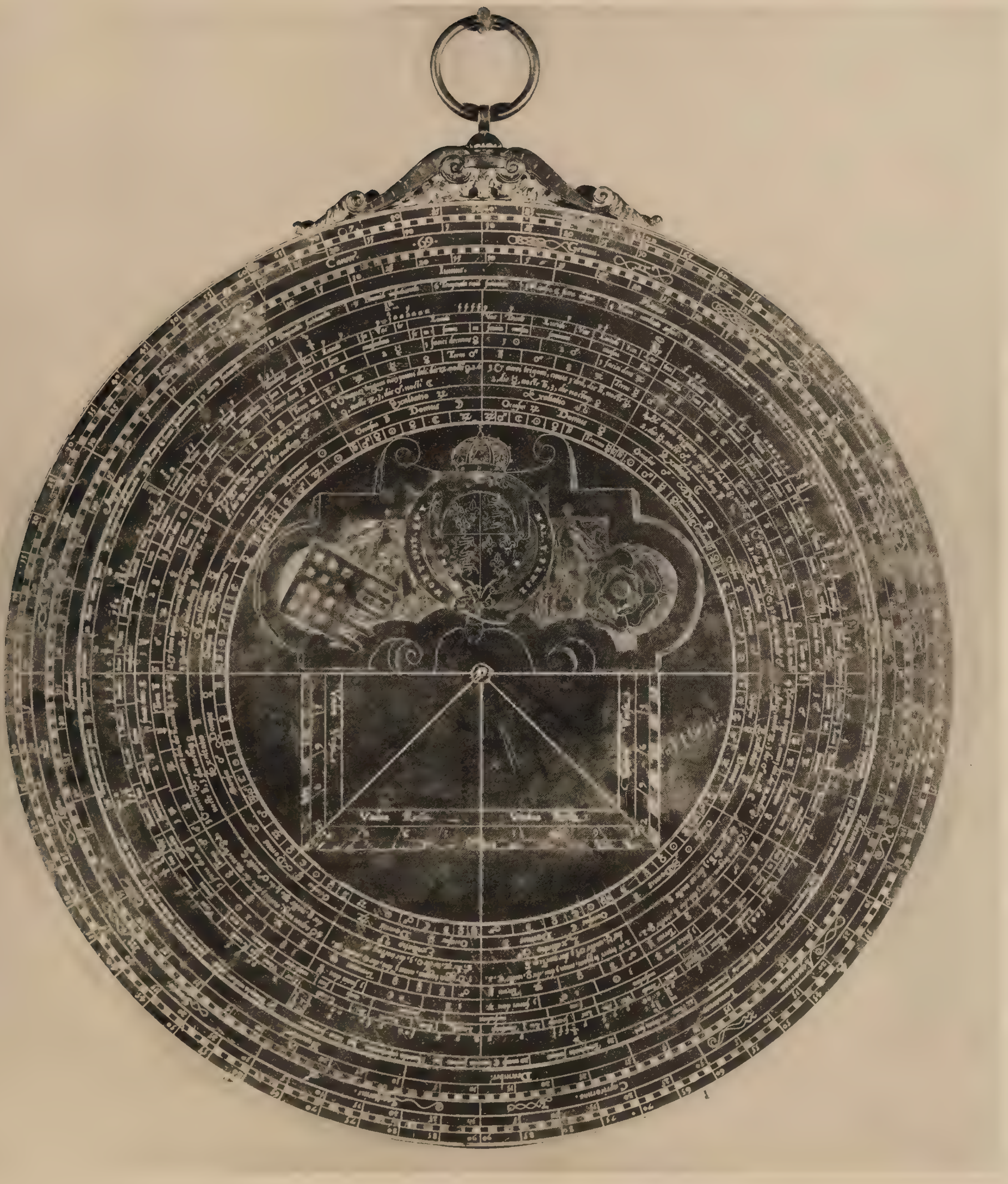

This or any other Mathematicall Instruments are made by Henry Sutton in Threadneedle Streete neere the Royall Exchange
Place ẏ Sun on ẏ Card toward the Sun in ẏ Firmament, and if the Sun have North Declination, the North end of the Needle will ✶
Stay over ẏ Houre ẏ day. in secting the parallell of declinat for that day. but South end of Needle ✶ South I. clin
North
South
Henricus Sutton Londini fecit

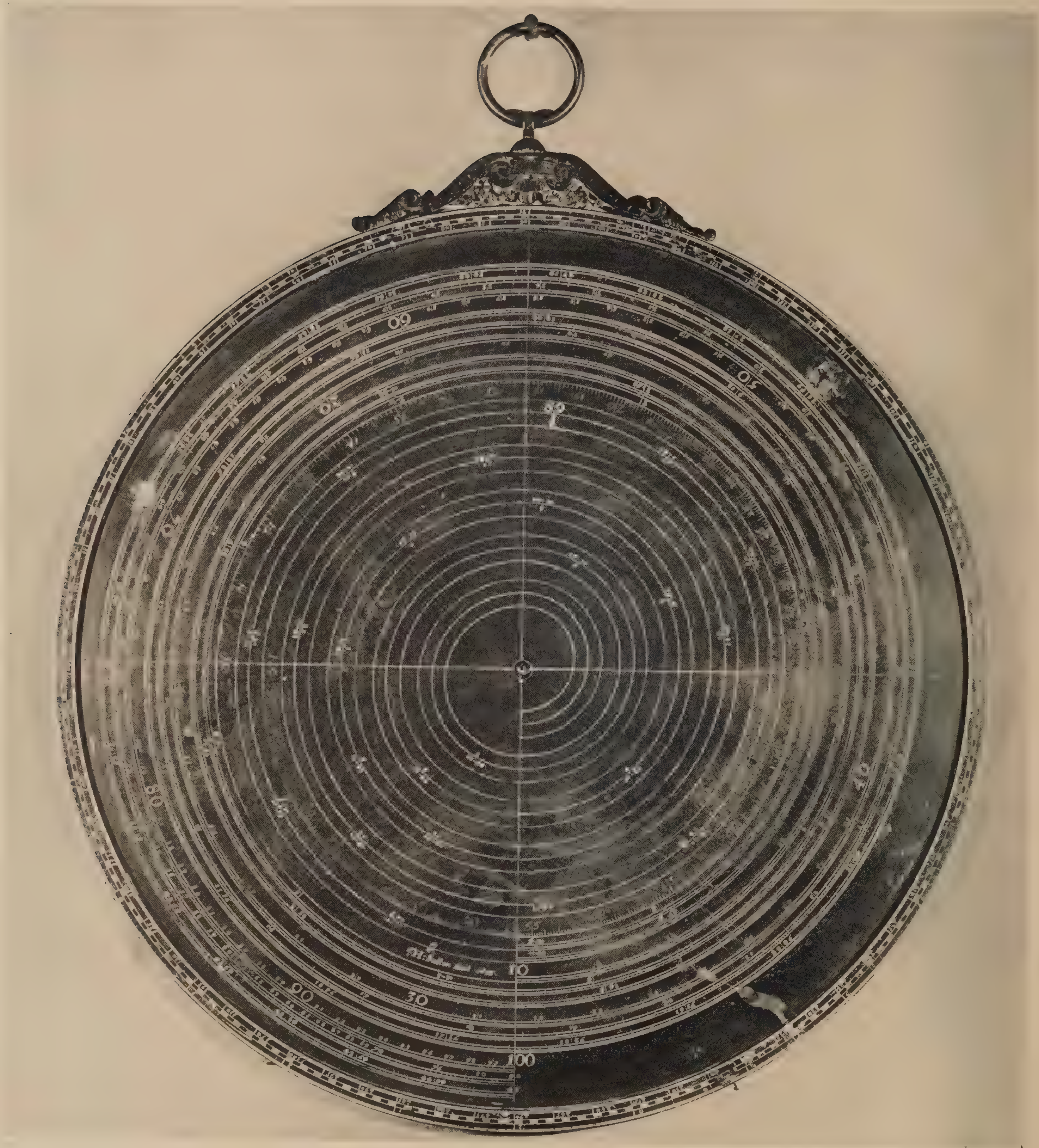
Fig. 1. Trade card of Henry Sutton

It is a spiral of nine circuits of three parallel lines, and facilitates logarithmic calculations to approximately three figures. The scratched line on the original was probably done by Wollaston, and it is just a logarithmic line in one circuit, bearing no relation to the other scales. Sutton filled up the large



The Back of Queen Elizabeth's Astrological Astrolabe

Published by the Society of Antiquaries of London, 1937



The Front of Queen Elizabeth's Astrological Astrolabe

Published by the Society of Antiquaries of London, 1937

hole which carried the pivot of the astrolabe with copper, and pierced it with a smaller one, on which was centred the pair of flat compasses necessary for the use of the rule. It is probable that the rete, alidade, and plate became separated from the other part of the instrument when it was in Sutton's hands. An illustration of his Trade Card is given (fig. 1). It bears the date 1654, and is the earliest known dated Trade Card of a mathematical-instrument maker.

Hitherto, this astrolabe has been considered to be the work of that Elizabethan master craftsman Humphrey Cole, but now, in the light of Elizabeth's navigational astrolabe signed 'Thomas Gemini' recently found at the Observatory at Oxford, it may be confidently attributed to that craftsman, the style and character of Elizabeth's coat of arms, the initial letters 'E. R.', and its swivel alone being sufficient for such identification. And so this astrological astrolabe in its present state may be said to represent the warm-blooded empiricism of the Elizabethan age on one side, and cold-blooded mathematics on the other—symbol of the rapid growth of materialistic science in the seventeenth century, which in 1662 crystallized into the foundation of the Royal Society with its motto 'Nullius in Verba'.

VI.—*St. Manchan's Shrine*

By T. D. Kendrick, *Esq., M.A., F.S.A.*, and Elizabeth Senior, *B.A.*

Read 28th November 1935

I

Very little is known about St. Manchan. He died of the plague in 664, composed a poem of which two lines survive, and may have been the author of a commentary, parts of which are quoted in an early twelfth-century manuscript (British Museum, Harley 1802).[1] But though various attempts were made to establish his genealogy, there were other saints of the same name, so that the references to him are sadly confused, and all that is certain is that he lived in the first half of the seventh century, and gave his name to the place now called after him Lemanaghan, i.e., Manchan's grey land (Manchan's church). This was a small monastery in co. Offaly that has little recorded history and can never have been a house of much importance. In 1531 it was under the charge of the prior of the neighbouring monastery of Gallen, and by the beginning of the seventeenth century it was almost unknown, being described at that time as situated in the middle of an impassable bog. Its chief treasure, the shrine, attracted no notice from the outside world; but it was still preserved there, and there is a record of its existence in the church at Lemanaghan about 1630.[2]

When this building fell into ruins the shrine was removed, probably in the eighteenth century, to a tiny 'thatched chapel' that had become the new parish church and stood on higher ground on the Esker road between Boher and The Doon. In the early nineteenth century, after the 'thatched chapel' had been burnt, the shrine was kept for a while at The Doon itself, the residence of the Moony family; but before 1838 [3] it had been taken back to Boher to be installed in a newly erected church, and the present Boher church, built in 1860, is its home to-day. The shrine first became known to antiquaries in 1853 when it was shown at the Dublin exhibition of that year, and was described and illustrated by Robert Travers, M.D.[4] It is the largest and most magnificent ancient reliquary in Ireland, and it attracted considerable attention; but no full account of it appeared in a learned journal until it was published in 1874 by the Rev. James Graves.[1] Subsequently, its condition began to give rise to anxiety, and in the autumn of 1935, on the suggestion of the Director of the National Museum of Ireland, Dr. Adolf Mahr, the shrine was brought to the British Museum for chemical cleaning and preservation, the necessary permission having been very willingly given by the ecclesiastical authorities concerned, the bishop of Ardagh and Clonmacnoise, Canon Reynolds of Ballinahowen, and Father Donlon, the parish priest of Boher. The purpose of this paper is to make generally available the photographs taken and the drawings made while the shrine was under examination in the British Museum. The shrine itself, after it had been cleaned and repaired, was exhibited to the Society of Antiquaries, and it was taken back to Ireland immediately afterwards. Before the shrine left Boher church its contents were removed, and found to consist of a few blackened and crumbling bones, one of them a part of a femur. It should be observed that the shrine had been opened on previous occasions,[2] and at the time of its visit to Dublin, either in 1853 or for a second exhibition in 1882, an electrotype had been made,

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[1] *B.M. Cat. Early Irish MSS.*, ii, 429.

[2] *Martyrology of Donegal*, 24th January (p. 27).

[3] O'Donovan's letters; Banagher, 18th January 1838. Cf. Lewis, *Topographical Dictionary*, 1842, ii, 257. My friend Mr. George Enraght Moony tells me that the shrine was brought to The Doon during the lifetime of his great-grandfather and was taken back to Boher when his father, born in 1830, was still a young boy.

[4] *Exhibition Expositor and Advertiser*, Dublin, 1853, no. 12, 4. Cf. *Arch. Journ.* x, 157.

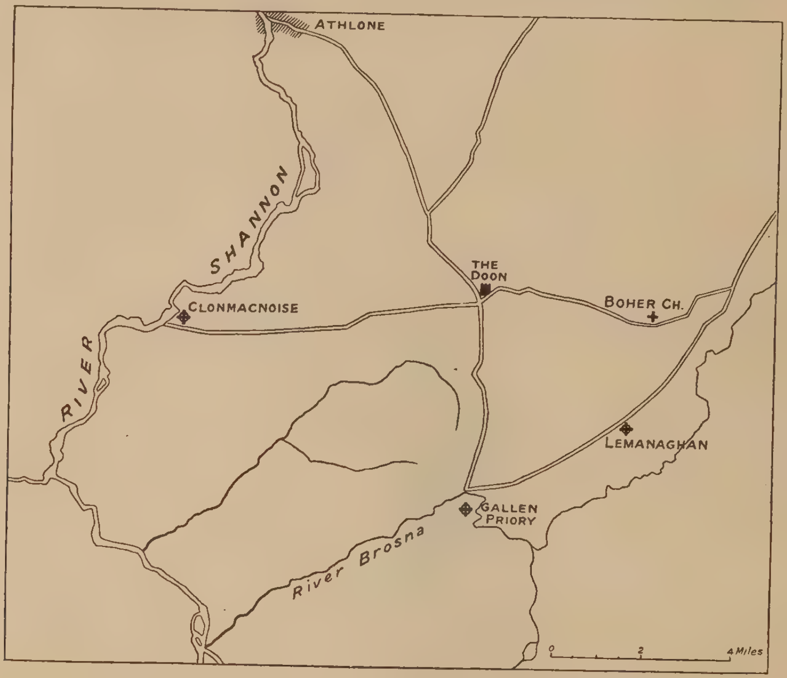

Fig. 1. Map of the Lemanaghan country

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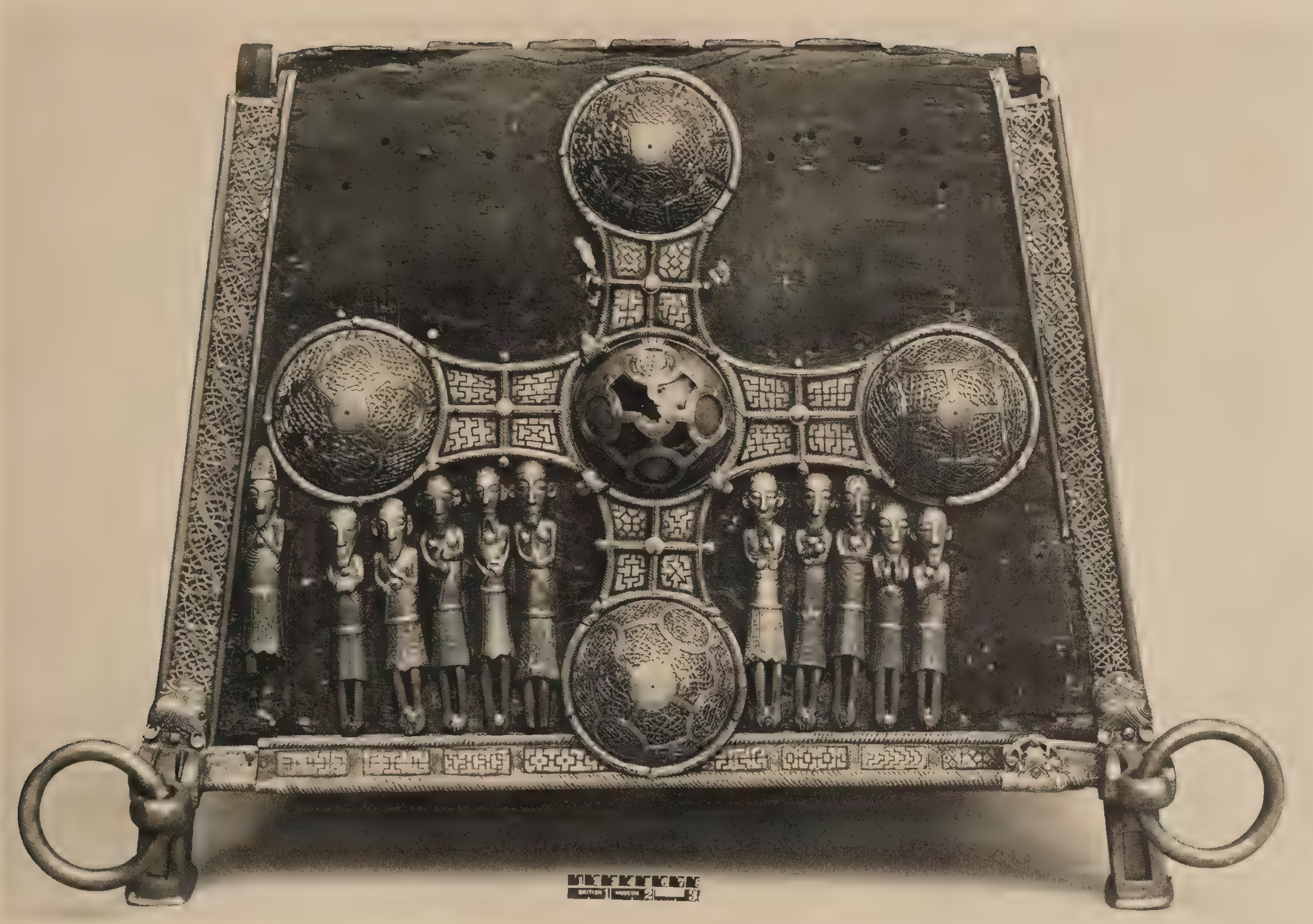
[1] *Journ. R. Hist. and Arch. Assoc. of Ireland*, 4th ser., iii (1874–5), 134.

[2] George Petrie, for instance, opened the shrine when it was at The Doon; see T. L. Cooke, *Early History of the Town of Birr*, Dublin, 1875.



St. Manchan's Shrine: face with figures

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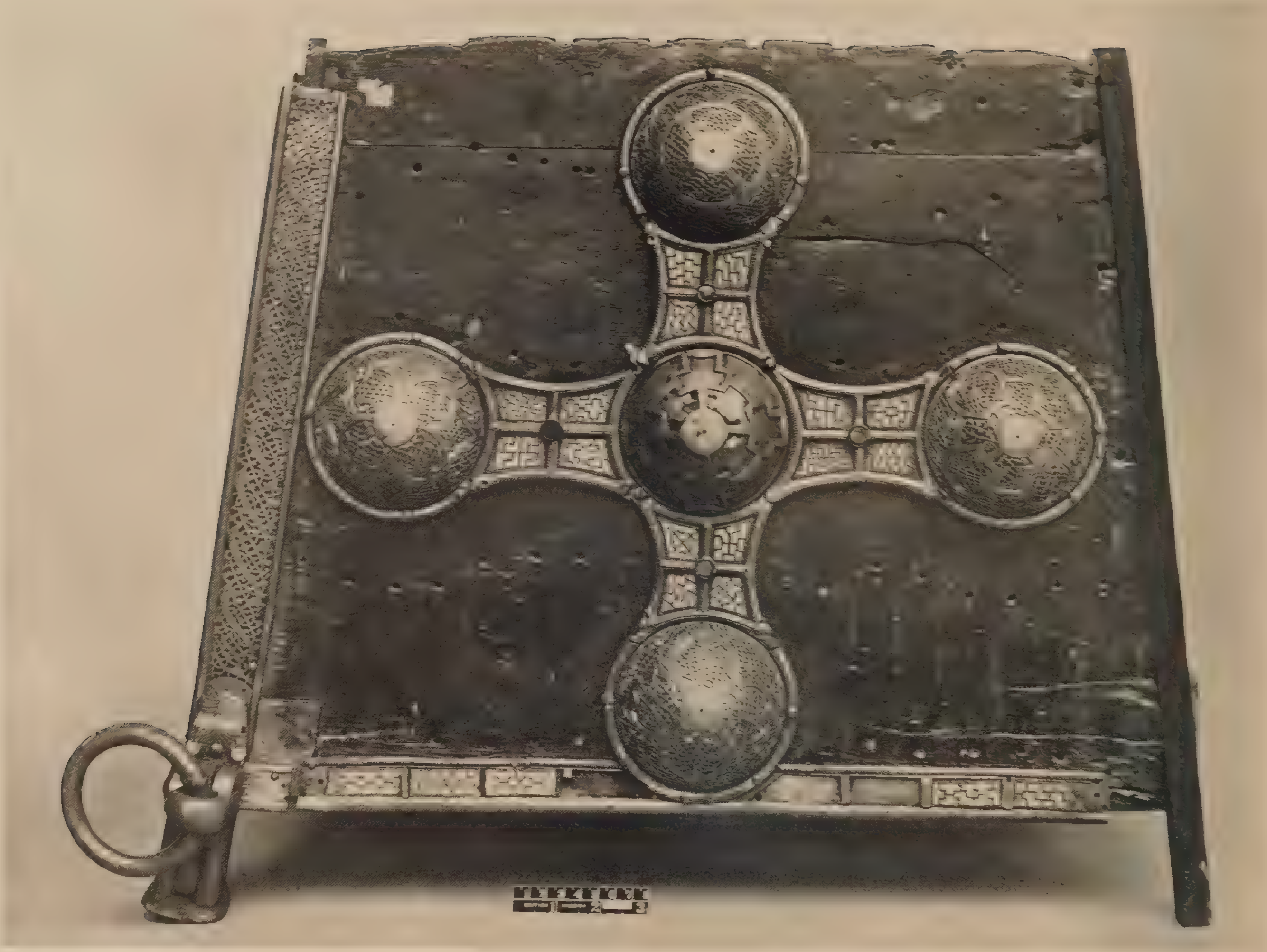

St. Manchan's Shrine: back

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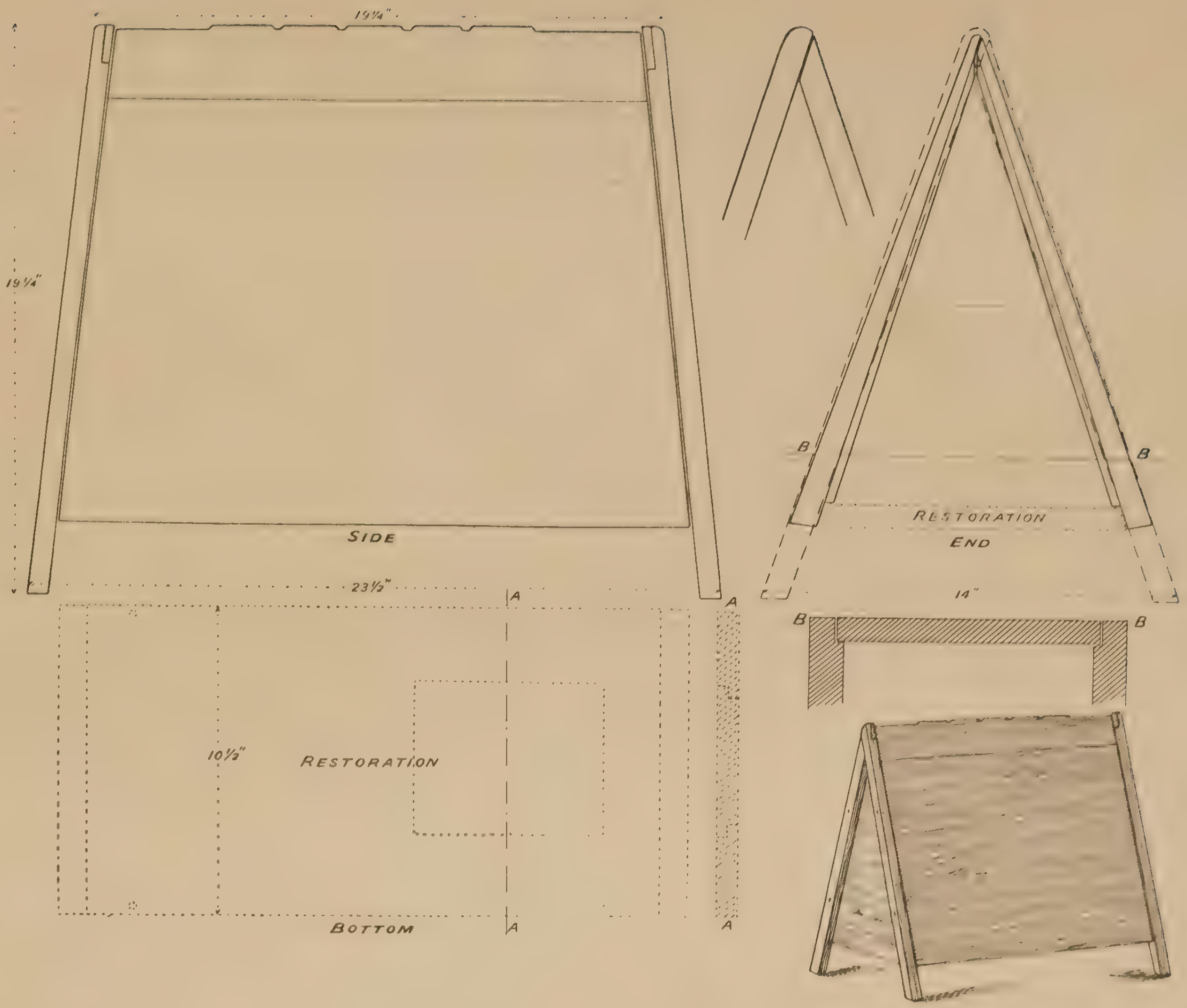
19¼"
19¼"
SIDE
23½"
A
A
10½"
RESTORATION
BOTTOM
A
A
B
B
RESTORATION
END
14"
B
B

Fig. 2. The carpentry of St. Manchan's shrine

this making necessary the temporary dismantling of the metal fittings, some of which have modern replacement numbers scratched on their backs. There was also, as will be shown, evidence of a previous attempt in recent times to repair the carpentry of the shrine.

The reliquary consists of a gabled box of yew wood with gilt, bronze, and enamelled fittings. It stands 1 ft. 7 in. in height, and covers a floor-space of 2 ft. by 16 in., the bottom of the box being raised on short legs to a height of 2½ in. off the ground. The wooden case (fig. 2) is composed of four inward-sloping boards that taper in thickness, the faces being 1 in. thick at the base, and ⅜ in. at the top. One face is made up of two pieces of wood, its upper part being a strip 2½ in. wide, and this has a bevelled top with niches cut in it at irregular intervals, presumably for the attachment of a metal crest that is now missing. The other face, a one-piece board, was trimmed at the top so that it rested flush against the opposite face just below its bevelled ridge, and the two were held together by a long iron pin, the heads of which are now hidden below the uppermost of the ornamental bosses on either side. The ends of the chest are triangular pieces of wood that are sunk by means of a rabbeted joint into a position flush with the lateral edges of the two faces; they are further reinforced by two pairs of wooden struts which are fastened by nails to the ends of the box, and continue below it to form the legs of the shrine; at the gabled top of the chest they meet in a rabbeted joint. The floor is a modern piece of wood, no doubt nineteenth-century work, and one of the struts was also modern.[1]

The four corners of this base-board rest, as did the original one, on bronze corner-pieces (fig. 3, *a*), through which the ends of the struts pass in order to form the feet of the shrine. These wooden feet fit into metal shoes with two open sides, and attached to each shoe is a shoulder bearing a large movable ring that was used for the carrying of the shrine (fig. 3, *b*). This fitting was secured to the corner-pieces, partly by the insertion of the end of the strut, and partly by a large rivet that passed through the shoulder bearing the ring, and two flanges projecting for the purpose from the corner-piece. The corner-pieces themselves were fastened to the wooden box by bronze nails, and also by a set of eight gilt bronze clamps (pl. XXVII, fig. 1) in the form of elaborate animal-heads with inset glass eyes. There are five of these now remaining, and each one of them is differently designed.

The principal ornament on the faces of the shrine consists of a cruciform arrangement of five large hemispherical hollow-cast bosses connected by short, flat arms that bear enamels. The central boss on each face has empty settings,

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[1] The completely exposed strut (pl. XXVI) was made at the British Museum to replace the clumsy piece of wood that had been used for the nineteenth-century repair; the missing lower portion of another strut was also replaced by a modern piece when the shrine was in London.

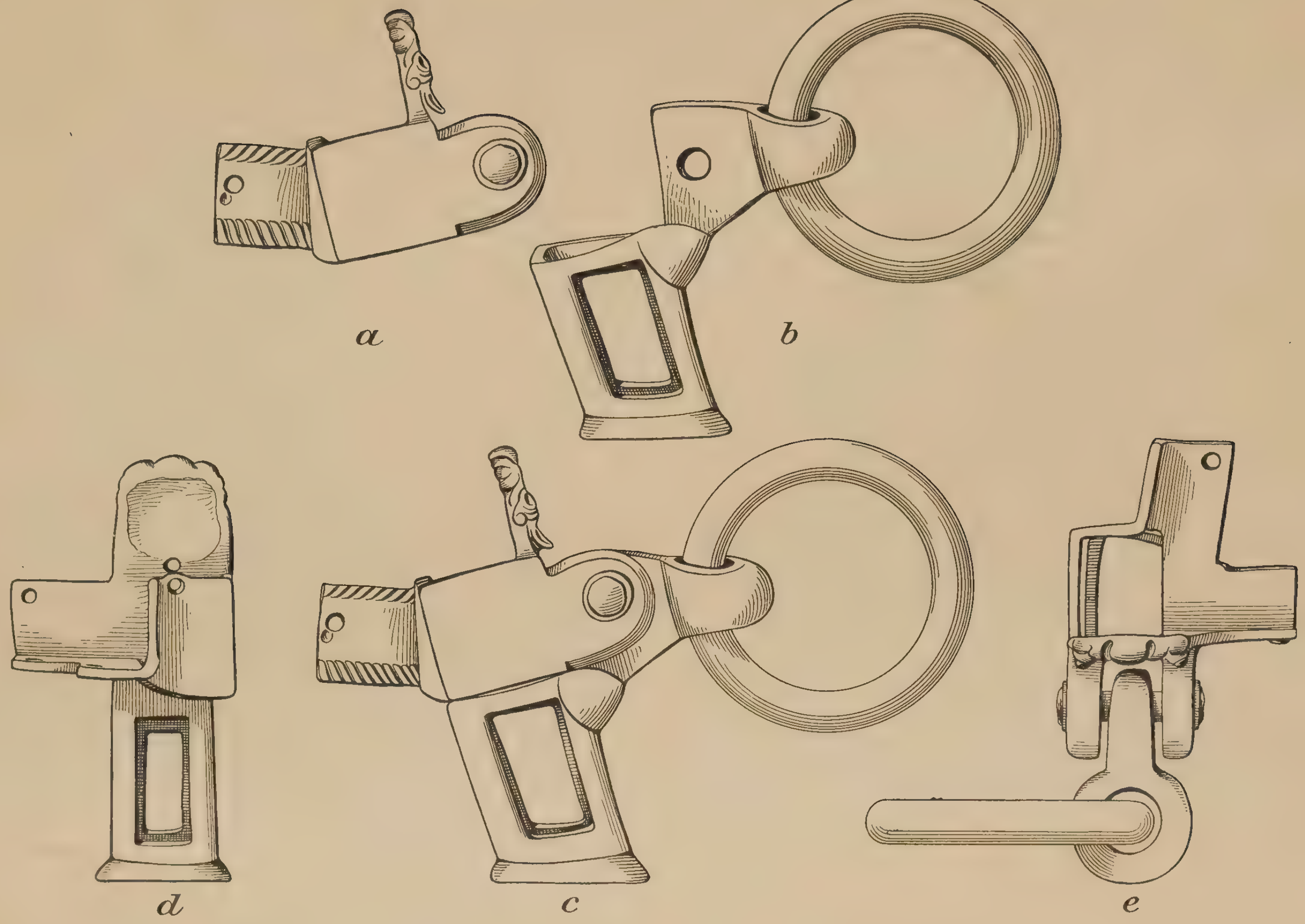

Fig. 3. St. Manchan's Shrine: corner-piece (*a*) and shoe (*b*), and assembled fitting (side-views *d* and *c*; top-view *e*)

probably to hold filigree panels, and at the top of every boss there is a bare space to which some sort of jewel, perhaps a crystal, was attached.[1] The bosses are all cast and chased, and each one of them has its surface divided into small partitions that form a pattern not repeated on any other boss, and in each of the partitions on the bosses at the ends of the arms there is an animal-design, no two of which are alike; so that there are in all 32 different designs on the 8 bosses. On removing the metal moulding that runs round the edges of the bosses, it was found that one of them had its flanged edge cut into an ornamental step-pattern (pl. XXVIII, fig. 3), as though there had been some change in plan about the design for the rims of the bosses.

The enamelling (pl. XXVIII) adorns not only the arms of the cruciform ornament on the faces, but also the border-strips at the base of the shrine and the four corner-pieces. It is all cloisonné work in red and yellow, and there are 60 small panels of this enamel on the shrine, each one of which bears a geometric pattern that is not repeated. In the two horizontal arms on the face now bearing the figures (pl. XXIV) the red lines have an inlaid zig-zag metal strip (pl. XXVIII, fig. 5), such as is to be seen on the enamelled weights from Island Bridge, Dublin, and in Irish niello-work (e.g. on the shrine of the Catharc of St. Columba at Dublin and on the Crosier of Kells in the British Museum).

The lateral edges of the shrine have openwork border-strips that sheathe the wooden struts. The two ends (pl. XXVI) are richly decorated by pairs of openwork triangular plaques mounted over plain sheets of gilt metal; they are fixed in position by a central spine with an animal-head terminal and also by engraved border-strips.

It is clear that the shrine has suffered serious mutilation. The crest is gone, many of the figures are missing, and very little is left of the thin silver plating that once covered the bare woodwork against which the figures now rest. Traces of this plating can be seen (pl. XXIV) near the upper arm of the cruciform ornament on the figured face of the shrine, and the minute pins that held it down at the top of the boards still survive in horizontal rows just below the gabled edge. As will be observed later (p. 114), it is possible that the figures were not added until after the defacement of the shrine by the removal of the silver plating, which may have borne incised ornament in the same style as that on the rest of the original metalwork of the shrine.

Setting aside, for the moment, the problem of the figures, one can settle the date of the shrine itself and its obviously original metal ornaments without serious difficulty. It is clearly work in the Connaught style of the days of Turlough O'Connor, and in all probability was made at Clonmacnoise about

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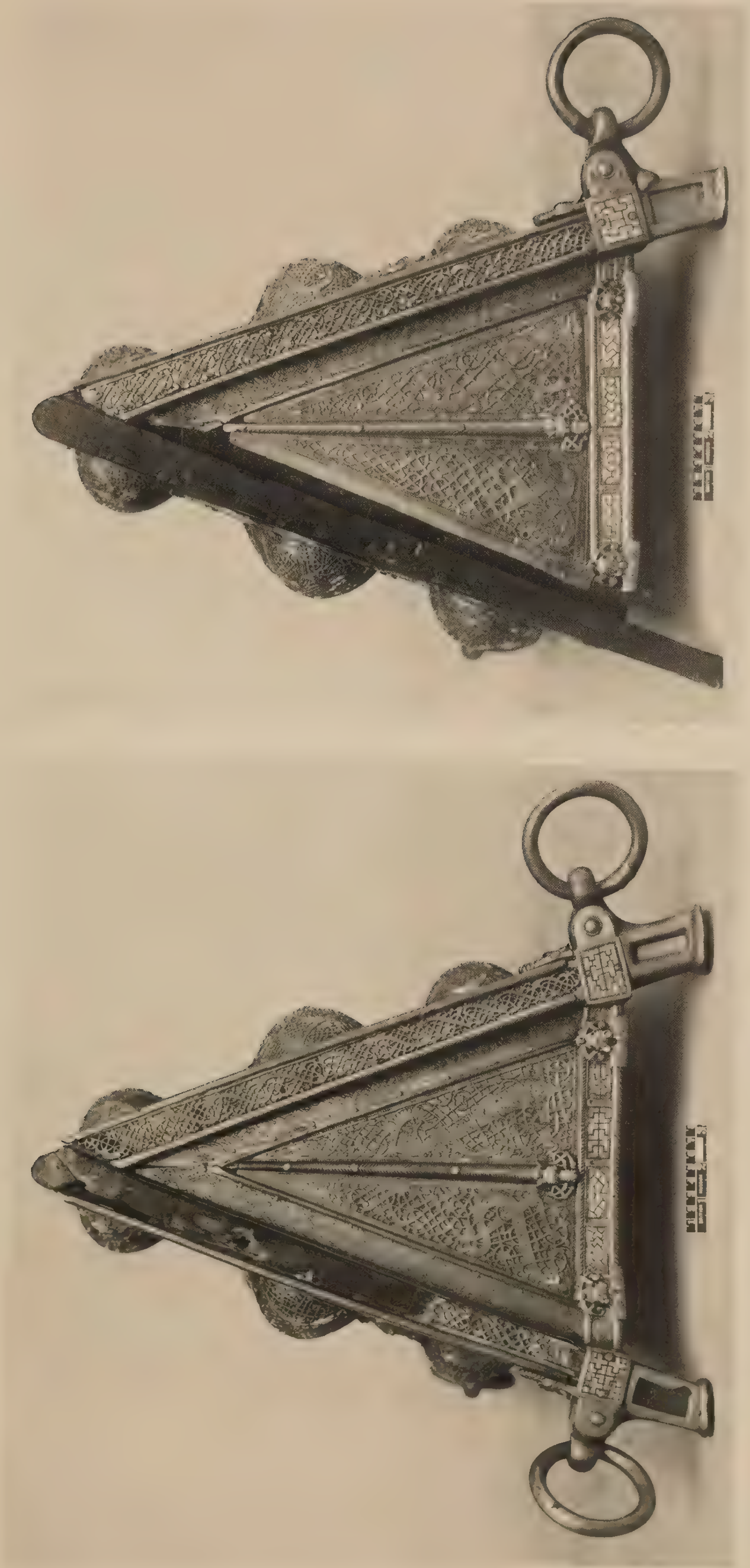
[1] A small piece of Gothic embossed metal-work has been inserted in one of the empty settings on the central boss on the face with the figures (pl. XXVIII, fig. 3).



St. Manchan's Shrine: end-views

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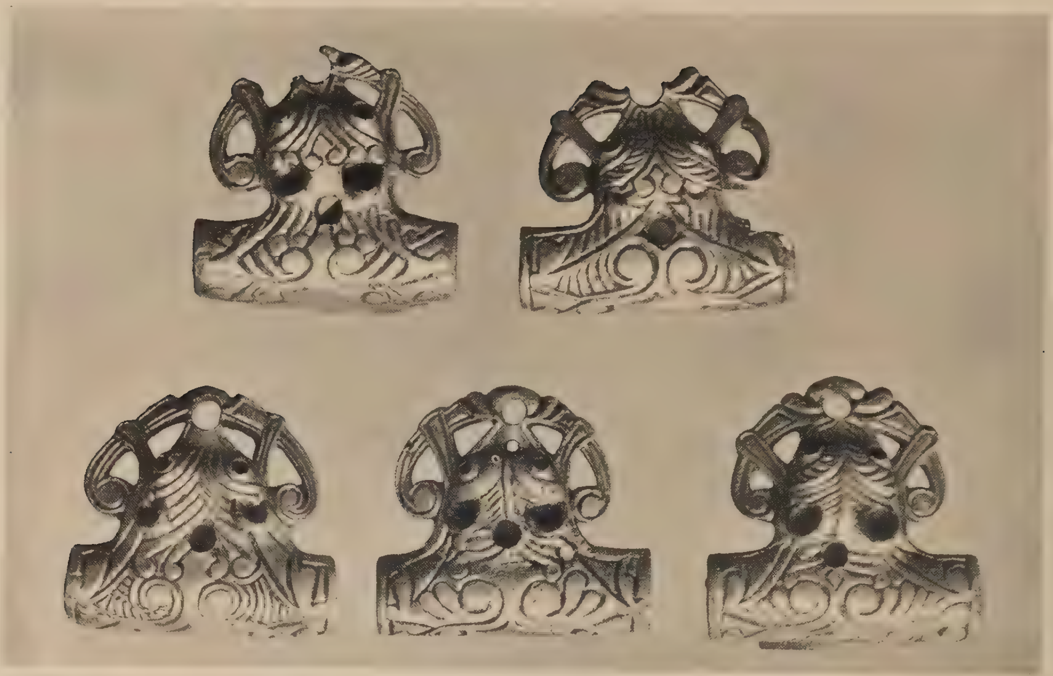

Fig. 1. Ornamental clamps from St. Manchan's Shrine ($\frac{1}{1}$)

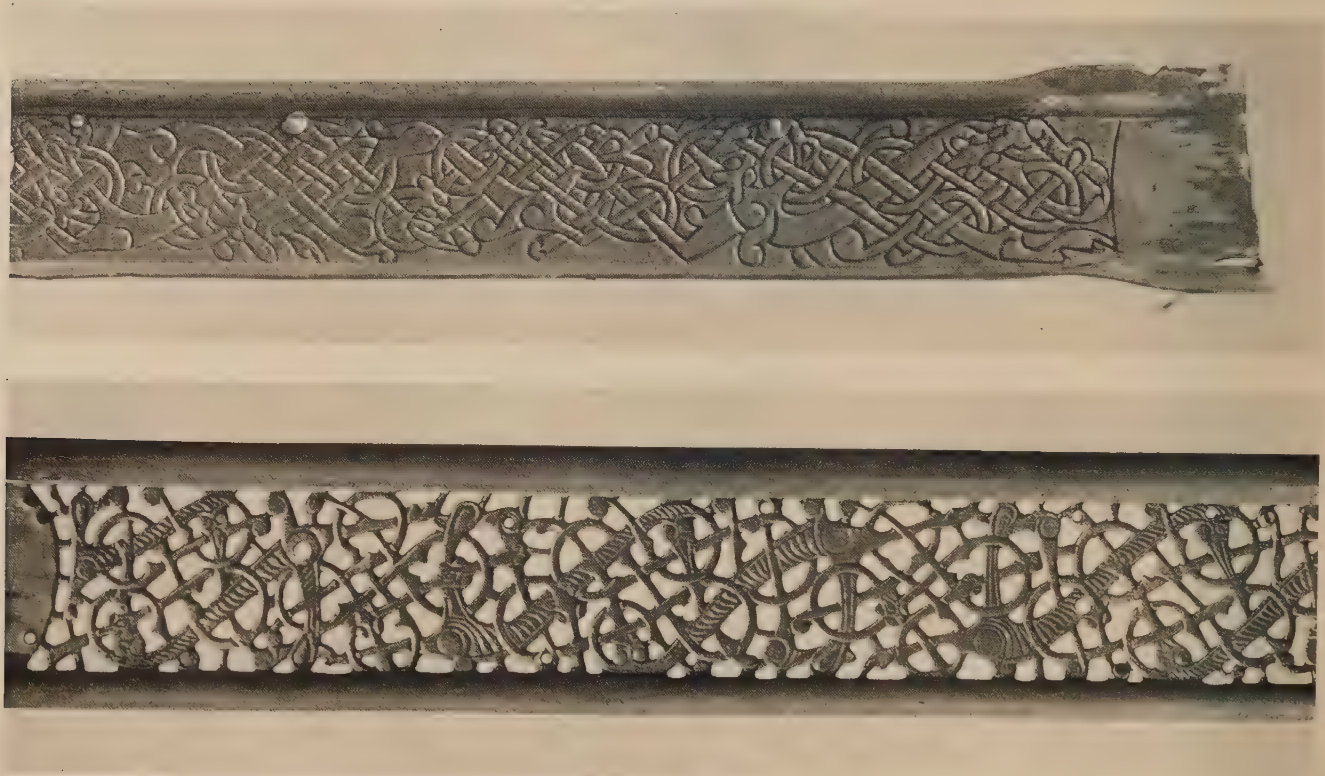

Fig. 2. Detail of binding-strips, St. Manchan's Shrine ($\frac{1}{1}$)

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A.D. 1130. Ireland is extraordinarily rich in dated metalwork of the eleventh and twelfth centuries, and in this series of well-known pieces the place of St. Manchan's shrine is easily determined. It is, for instance, very close in both decorative style and in technique to the Cross of Cong, which was made at the order of Turlough O'Connor in 1123.[1] The principal animal style of the shrine is also repeated on the stone High Cross of Tuam, which is a decade or two later than the Cross of Cong; but we are warned against assigning the shrine to a date much later than the thirties by the shrine of Dimma's Book (*c.* 1150), for here the lightness and prettiness of the pieces of the Cong period have disappeared, and a much harder and flatter type of ornament is in use.[2]

It will be observed that the principal animal-ornament of the shrine is that which is commonly referred to as the 'Irish Urnes' style, and this is particularly well illustrated on the panels of the bosses, on the openwork border-strips, and on the triangular panels at the ends. It is a smooth-flowing style in which the main statement of the form of the beast loses much of its intended significance because of the general delicacy of the design and because of the emphasis laid on the graceful tracery surrounding it. Though this style is said to owe its origin to Scandinavian influence, it is certain that this Irish version of the Urnes manner is in part a revival of the traditional Ribbon style animal-pattern of Ireland, which, indeed, can still be seen in a survival of its 'Jellinge' phase on the early eleventh-century shrine of St. Molaise's Gospels. The Urnes style, in which the erect form of a quadruped is the dominant theme of a ribbon-pattern, does not appear in Ireland until after the time of the Battle of Clontarf (1014), which marks the beginning of the decline of the temporal power of the vikings, and it seems to have attained its first flowering about the time of the shrine of the Stowe Missal, whereon the famous Urnes theme of the animal-combat is clearly stated. Later in the eleventh century it is further developed in such pieces as St. Cuillean's bell-shrine; but it does not attain the form used on St. Manchan's shrine before the period of the Lismore crosier (*c.* 1113) and the shrine of St. Lachtin's Arm (1118–27). It is, of course, in one sense a general style of the North Sea area and cannot be dissociated from the equivalent styles in Scandinavia and England; yet in Ireland it has its own specialized development, and must to some extent have been influenced by a deliberate renaissance of the rhythm of the antique Ribbon style that was begun by Brian Boru and achieved its full blossoming in the time of Turlough O'Connor. It is, in fact, a notable feature of the shrine as a whole that, though it comes almost at the very end of the great masterpieces of Irish art, it nevertheless recaptures the chief characteristics of the earlier work of the Golden Age, the barbaric excess of ornament, the incredible subtleties of detail, the noisy and insistent background, the general clamour of the various component parts for individual recognition, the old reluctance to state honestly and uncompromisingly a simple geometric fact. As was the eighth-century Tara brooch before it, so is St. Manchan's shrine a rich and dazzling Celtic bewilderment, a perpetual challenge to the eyes and a perpetual delight.

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[1] Note the panelled central boss and its rolled edges, the jewelled animal-heads, the red and yellow geometric cloisonné enamel, and the plaques with the animal-ornament which are so like those on the bosses of the shrine.

[2] The entry in the *Annals of the Four Masters* sub anno 1166, that records the making of a shrine of St. Manchan, can be disregarded here. It refers to another saint who may not even have borne originally the same name, and certainly had a different 'day', and lived in a district far removed from Lemanaghan.

The animal-ornament of the shrine is not, however, all of the same kind. On the engraved border-strips at the ends the animals are plainly designed with a different rhythm and form part of a jerky, restless tangle of lines that we know to be connected with the 'Ringerike' style. Ringerike designs are usually foliate, and the animal-pattern here is certainly no copy of continental or English work; but the change in manner is so noticeable that a word about the development of this second Scandinavian style in Ireland is necessary. It appears first of all in its closest approach to a continental form on the shrine of the Catharc of St. Columba (1062–98), where it is an uneven, ragged ornament that is mainly foliage, though the principal curving bands are probably intended to be the bodies of serpents. After this, the untidy Ringerike rhythm is used chiefly for those 'draggled feather' designs that adorn many of the animal-heads in the late eleventh century, as on St. Cuillean's bell-shrine; but it was never very extensively employed, and became less and less popular as the flowing Urnes style developed. The lower end of the crest of the Lismore crosier, for instance, shows us how an Urnes feeling could transform and regularize the wild Ringerike locks of the terminal animal, a process that is also very well illustrated by the contemporary shrine of St. Patrick's Bell. By this time all trace of the original foliate and ragged character of the older Ringerike designs was lost, and the Irish artist merely used a suggestion of the ancient Ringerike manner for drawings that belong to the Urnes types. Thus it comes about that our shrine presents us with the remarkable phenomenon of an Urnes pattern drawn in a Ringerike way. We cannot pretend that this is anything more than a very much diluted Ringerike style, and it is in keeping with the spirit of the age that such a hesitating and irregular rhythm should be seen on the point of vanishing into the smooth even-flowing style that immemorial tradition had made more congenial and more natural to the Celtic designer.

T. D. K.

II

The ornamental bosses, strips, and side panels of St. Manchan's shrine have been shown to be of a style which owes much to outside influence, but which is nevertheless predominantly and vigorously Irish. On the other hand, the cast bronze figures now attached to the shrine, though demonstrably of Irish workmanship, show a definite break with the tradition of Irish Christian art, which as we have seen survived in the second quarter of the twelfth century. The character of Irish Christian metal-work until that date had been one of continuous surface decoration composed of asymmetrical and much-moved pattern units closely knit together. Human or animal figures introduced in either metal-work or manuscripts had been interpreted in terms of such decoration. Even as late as the eleventh century, when the human figure had become a powerful and independent focus of interest for English and continental artists, the figures on an Irish shrine like that of St. Moedoc,[1] though they no longer offered a flat field for arbitrary decoration, were inextricably bound up with the decorative patterning of the shrine's surface by the interlocking of their hair and garments in interlace *motifs*, and the binding down of the feet in a border ornament. The *repoussé* technique of this shrine is perhaps partly responsible for the continuous design; but in Irish cast metal-work of the tenth and eleventh centuries there is evidence of the same spirit. The book-mountings in the Dublin National Museum[2] which represent crucifixions are composed of several figures, or of figures and ornamental background, cast in one piece; and the early Romanesque capitals of Irish architectural sculpture show the same treatment of the human form. The most typical form of doorway capital is that of a human head, with the profile at the angle, tied down to the flat sides of the capital by means of interlace patterns formed of the hair, moustaches, or beard. Examples of these capitals are to be found at Killeshin, Rahan, and Clonalten.[3]

It is obvious that the figures on St. Manchan's shrine are quite different in character from those in such metal-work or sculpture. They are entirely self-contained and independent of their background; conceived as distinct and separate solid forms, and not flattened units of a closely-woven decorative scheme. On purely stylistic grounds it is difficult to imagine that the strong impulse towards continuous flowing surface ornament evinced by the purely ornamental parts of the shrine could have been denied, as these figures deny it, in the same workshop and at the same date. There is, however, in addition, the strongest internal evidence that they were later attachments, for two of the figures have been badly mutilated to make them fit the space they occupy. One is severed at the ankles and another has been bent at the knee and waist to shorten it, so brutally as to break it at the waist where it has been joined together with solder (see pl. XXIX, fig. 1, *h* and *i*). The ten figures which were attached to the shrine (see pl. XXIX, fig. 1) when it was shown at the Dublin exhibition of 1853, and also the eleventh figure with head-dress on the extreme left (pl. XXIX, fig. 2), not added until after 1874, are all of cast bronze, once gilt, and are all of similar type, though no two were cast from the same mould. They are now attached to the lower part of one face of the shrine (see pl. XXIV), and there are nail-holes for many more on the upper part of this face and on the other side of the shrine. Their common type is that of a rigidly frontal upright figure five to seven inches high contained within a narrow form, with large oval head, egg-shaped eyes, hair and beard patterned with a simple geometrical design, nude torso with heavily demarcated ribs, a vertically panelled skirt-like garment from waist to knee ornamented in varying degrees, and straight legs with a centre ridge, joined at the feet, through which is one of the two or three nail-holes made to hold the figure in place. The arms are the most curious and discrepant feature, for not only are they proportionately small and relatively ill formed, but they are covered with long close-fitting sleeves of ridged drapery which are quite out of keeping with the unclad torsos. This seems to be the essential clue to an explanation of the origin of the figures, which would account both for their manufacture in Ireland, unheralded as they were in Irish art, and for their formal peculiarities. I suggest that they were derived from the most common type of cast metal figure of twelfth-century Christian art on the continent, the crucifix figure. The skirt-like garment is a simplified version of the knee-length loin-cloth worn by such figures, while the legs and feet extending below it, and the ribbed torso above, are immediately suggestive of the typical form of the Romanesque crucifix. Only the disproportionately thin and small arms, clothed in sleeves, find no model here, and these have evidently been separately conceived, or adapted from some other source with little respect for congruity.

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[1] A. Mahr, *Christian Art in Ancient Ireland*, i, 1932, pls. 60, 61.

[2] Mahr, *op. cit.*, pls. 28, 29 (11).

[3] F. Henry, *La Sculpture irlandaise*, 1933, ii, pls. 126, 131, 133, 147. See also H. G. Leask, 'The Characteristic Features of Irish Architecture from Early Times to the Twelfth Century', *North Munster Antiquarian Journal*, 1936.

Of all the twelfth-century schools of metal-work, those whose products seem nearest in style to the St. Manchan shrine figures are the central and northern German ones. The mid-twelfth-century bronze doors of Saxon workmanship at Novgorod have figures whose heads, proportions, and general aspect are very similar to these Irish figures.[1] Another school of metal-work which exhibits

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[1] Goldschmidt, *Die Frühmittelalterlichen Bronzetüren*, ii; *Die Bronzetüren von Gnesen und Novgorod*, 1932. See especially pls. 42, 55, and 66.

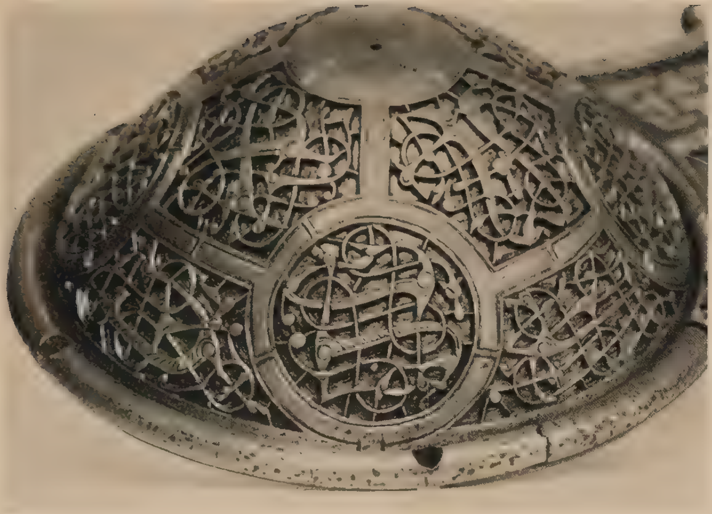

Fig. 1. Boss on face with figures (Pl. XXIV) ($\frac{1}{1}$)

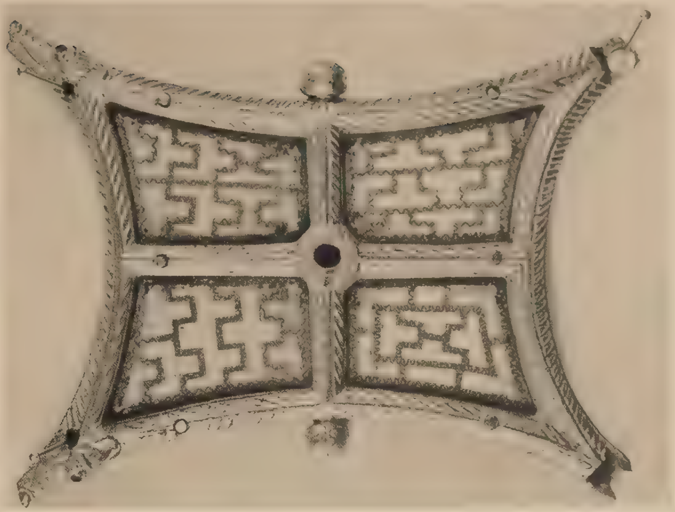

Fig. 2. Enamelled plate from cruciform ornament on face with figures (Pl. XXIV) ($\frac{1}{1}$)

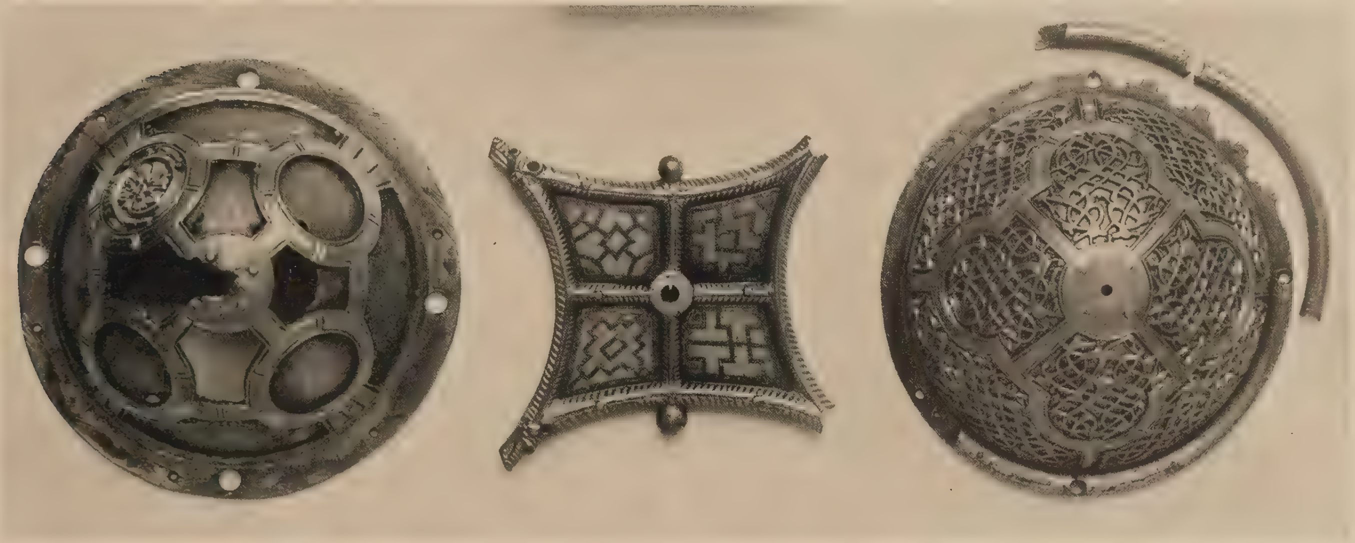

Fig. 3. Central boss, enamelled connecting plate, and a terminal boss, all from the face with figures ($\frac{1}{2}$)

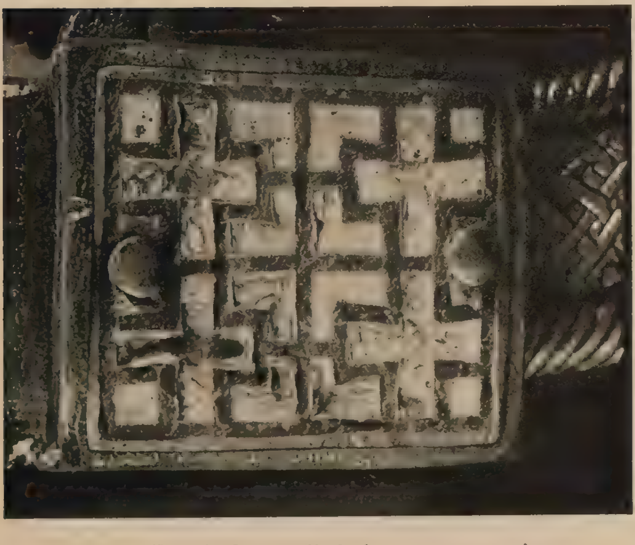

Fig. 4. Detail of enamelled plate on corner-piece (cf. Pl. XXVI) ($\frac{1}{1}$)

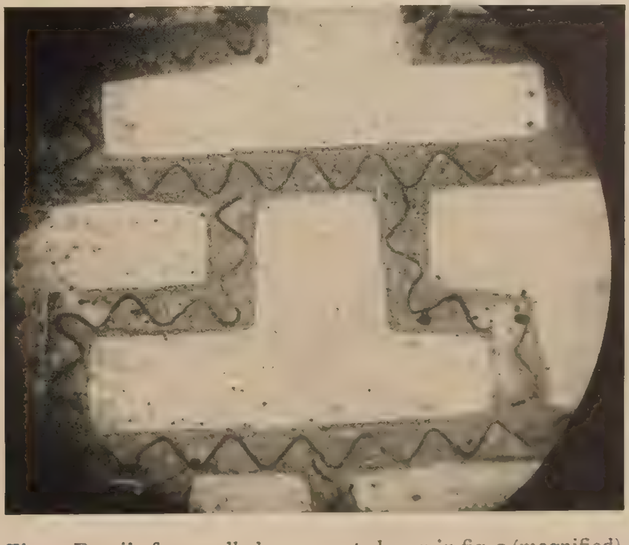

Fig. 5. Detail of enamelled ornament shown in fig. 2 (magnified)

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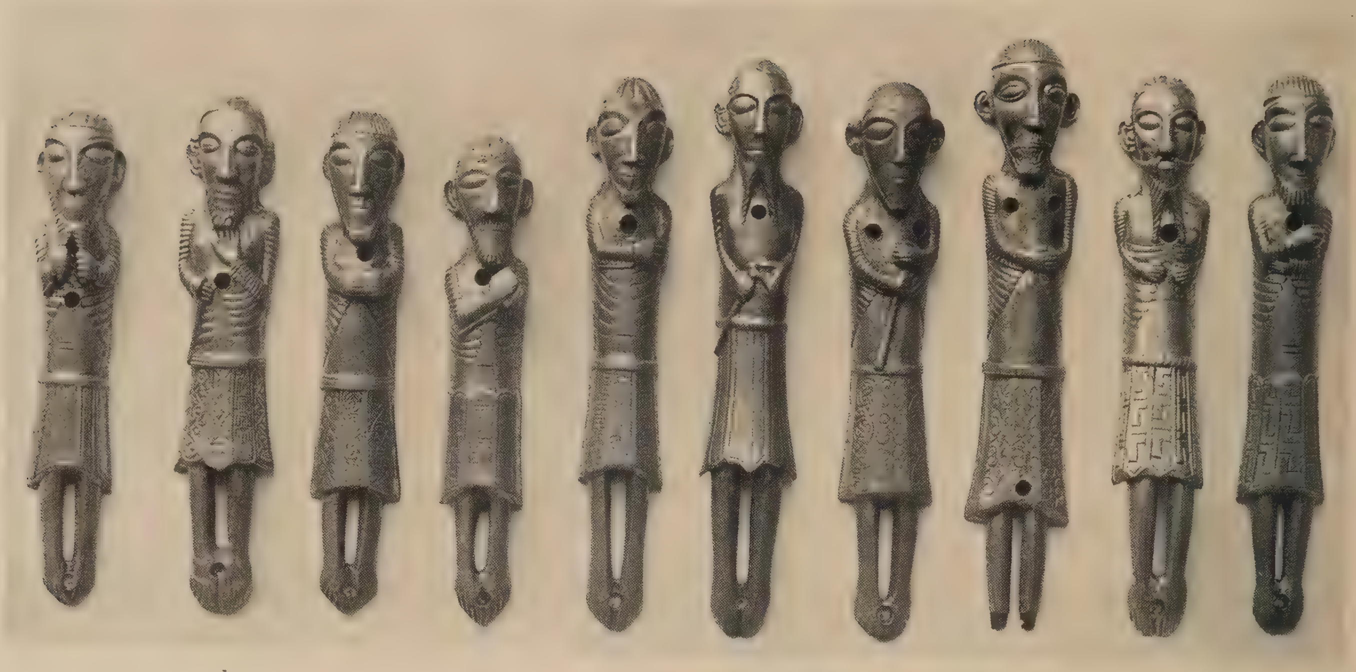

Fig. 1. The ten figures attached to the shrine when it was shown at the Dublin Exhibition of 1853

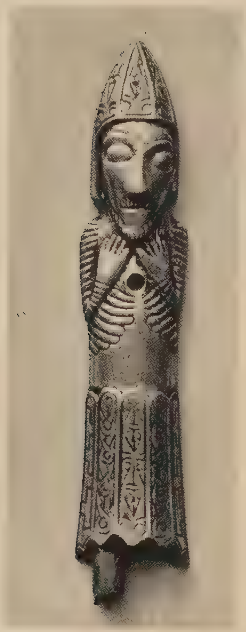

Fig. 2. Figure now on the shrine, found at Clonmacnoise

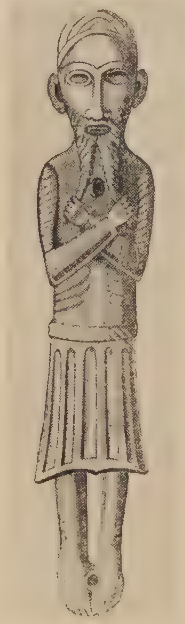

Fig. 3. Figure published in *Dublin Penny Journal* 1832, now untraceable

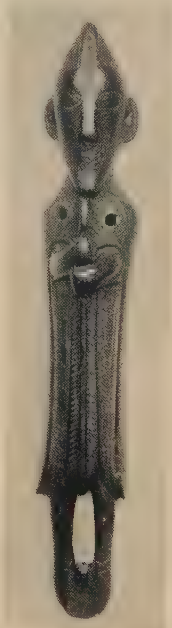

Fig. 4. Figure in Dublin (by permission of the National Museum, Dublin)

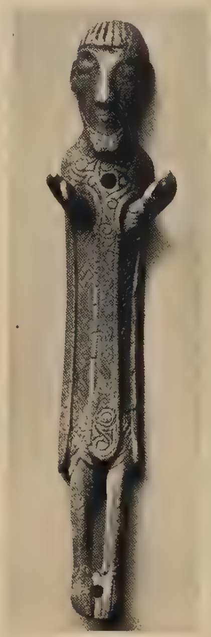

Fig. 5. Figure in the British Museum

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some similarities is that which produced the Danish twelfth-century altar-frontals,[1] especially those of Lijsberg[2] and Tvenstrug in the Copenhagen National Museum. The production of crucifixes in central and north Germany, stylized like the figures of the Novgorod doors and the Danish altar-frontals, was considerable throughout the second half of the twelfth century, but unfortunately they have never been collected together and sorted out in an analytical publication. The crucifix in St. Peter's church at Fritzlar (see fig. 4), the Fritzlar antependium, two crucifixes in the Pitt-Rivers Museum at Farnham,[3] appear to be of the same type as the models from which the St. Manchan figures must have been derived. It is probable, however, that this superficial resemblance is the result on both sides of local workmanship, and that both have a common source in the more famous, more naturalistic, and softer crucifix figures of the Mosan and Rhenish schools (e.g. fig. 5, from the Schnütgen Museum at Cologne). In any case it seems difficult to place the St. Manchan figures earlier than the last quarter of the twelfth century, for most of their possible models belong to the second half of that century. There seems no doubt, therefore, that they post-date the rest of the shrine.

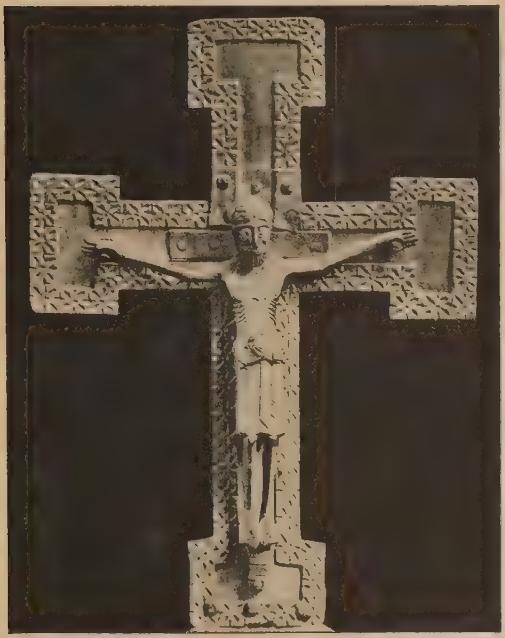

Fig. 4. Crucifix in St. Peter's Church, Fritzlar

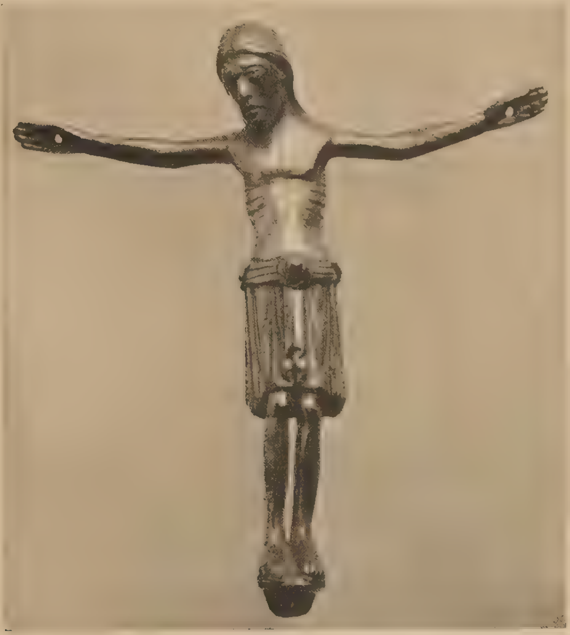

Fig. 5. Crucifix in the Schnütgen Museum, Cologne

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[1] Poul Nørlund, *Gyldne Altre*, 1926. See especially fig. 41.

[2] Cast in the Victoria and Albert Museum.

[3] Borenius, *Burlington Magazine*, lviii, 1931, 174, pl. I, A and B.

How the Irish craftsmen obtained their models is a problem which offers little difficulty. The connexion between the Irish church and the church on the continent had always been close, and the influence of Irish art on that of the rest of western Europe at an earlier period had been pronounced. It is hardly surprising that, at a time when Irish architecture and architectural ornament were beginning to show the influence of continental Romanesque art, and the tradition and vigour of Ireland's own art and culture were dying, Irish metal-work should also show unmistakable evidence of the same influence.

Despite the similarity between the shrine figures and some products of European metal-work of the twelfth century, there is no doubt that they were made in Ireland. The ears of several of the figures (pl. XXIX, fig. 1, *b*, *f*, *g*, and *i*) and the beard and hair of them all, especially of the footless figure (pl. XXIX, fig. 1, *h*), show the typically Irish use of natural forms as fields for abstract decoration. The patterns of the skirt-like loin-cloths are sometimes composed of Irish and sometimes of southern Romanesque *motifs*, and they include four Ringerike panels of a kind similar to the ornament on some of the shrine's strips and panels, though more simplified (pl. XXIX, fig. 1, *c* and *g*), and one panel of a symmetrical and regularized trumpet pattern (pl. XXIX, fig. 1, *g*). Mixed with these native *motifs* are simple step patterns and lozenge, or scroll, or kindred patterns (pl. XXIX, fig. 1, *b*, *c*, and *h*), such as one would expect to find in late Romanesque architectural ornament from southern Italy to northern England. The gesture of the figure clutching with both hands a forked beard is common on Romanesque capitals, and probably originates in an early capital at S. Benoît sur Loire,[1] whereas the figure with two fingers pushed through his beard seems to be peculiarly Irish. Moreover, at least four similar figures have been found in Ireland.

Of these four figures one is now attached to the shrine (pl. XXIX, fig. 2). It was bought by Mr. Robert Day in Athlone, and was reputed to have come from Clonmacnoise, which is not far from Lemanaghan. It must have been attached to the shrine some time after 1874. Though legless it is similar to the shrine figures in everything except the helm or mitre on its head. Another figure, undoubtedly from the same series as the ten shrine figures (pl. XXIX, fig. 3), was illustrated by Dr. Petrie in the *Dublin Penny Journal* for 1832 (p. 97), and was reported to have been found in county Roscommon, and to belong to the Maguire collection; but its present whereabouts are unknown. The reproduction shows all the main characteristics of our series, a plain panelled skirt, and crossed arms, with the hands grasping the two halves of a forked beard. A third figure, mitred and fully clad (pl. XXIX, fig. 4), was bought by the Royal Irish Academy in 1850. Its nail-holes are said to fit three perforations on the

[1] Focillon, *L'Art des sculpteurs romans*, 1931, pl. XVII.

upper part of that face of the shrine which now has no figures attached to it. The fourth figure (pl. XXIX, fig. 5), acquired by the British Museum in 1868 from the Maguire collection, and said to have been dug up on the site of St. John's Abbey, Thomas Street, Dublin, is bareheaded and clad in a vestment through which the hands protrude. The positions of the fingers indicate that they once held rods of office. These two last figures are similar, and differ in many ways from those on the shrine. Their feet are shod, the transition from garment to legs is softened by a repetition of the shape of the edge of the garment, and the pattern on the garment of the second is asymmetrical. They appear to be much more in the Irish tradition, and much less dependent on a foreign model, than the shrine figures.[1]

The iconography of the shrine figures is a matter of difficulty. One of the ten figures holds an axe (pl. XXIX, fig. 1, *f*), two carry small hooked sticks (pl. XXIX, fig. 1, *b* and *g*), one a book (pl. XXIX, fig. 1, *d*), and one a ball (fig. 1, *k*). These attributes are not inconsistent with representations of apostles, but since the nail-holes on the shrine indicate that there were at one time some fifty figures (there are actually fifty-two on the electrotype reconstruction in the Dublin National Museum), they cannot be accounted for in this way. Mademoiselle Henry has suggested that the British Museum figure (pl. XXIX, fig. 5) originally held the symbols of Christ the Judge, and that the shrine figures belong to a Last Judgement of the type comparable with the crucifixion on the lintel at Maghera.[2] This is plausible, but there is no possibility of a centralized composition for a Last Judgement on the shrine itself, and the British Museum figure seems to be stylistically unlike the shrine figures, so it is difficult to suppose that they all came from a single source. Moreover, the holding of rods of office is an attribute of several of the apostles on the shrine of St. Moedoc,[3] so the identification of this figure as Christ cannot be definite. It seems most likely that the figures represent apostles or saints, and that they were either taken from different sources and attached to the shrine at a period later than their original making, or that they were made for the shrine fifty years or so after it was first completed with some idea of imitating the large Rhenish figured shrines of the late twelfth century, but with small regard for subject-matter.

It would be interesting to find some parallel for these shrine figures in Irish stone sculpture. The highly decorated stone crosses of Ireland, with their complicated subjects of numerous figures and diverse ornament, did give place in the twelfth century to cross sculpture of a semi-monumental kind, such as the crosses of Dysert o' Dea, Glendalough, Roscrea, Cashel, and Tuam,[1] but of these the only dated monument is Tuam. The head of Tuam cross shows the crucified Christ, but the dated part is the base, and, as Mademoiselle Henry has pointed out to me, the cross as it now stands is made up of three different crosses, and the head is later in date than the rest. Therefore, except as another illustration of the penetration of Ireland by extraneous Romanesque forms, its stone sculpture does not throw much light on the place of origin or the date of the St. Manchan shrine figures.

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[1] Detailed notes of the publications of these figures are to be found in H. Crawford, *List of Irish Shrines and Reliquaries*, i; *Journal of the Royal Society of Antiquaries of Ireland*, vol. 53, 1923, p. 87, and pl. IV: I. 15, 16, 17, and 18. The inclusion by Crawford of another figure I. 14 (p. 86) is due to Miss Stokes's misleading description of the British Museum figure as holding a book.

[2] F. Henry, *op. cit.* ii, pl. 112.

[3] See Mahr, *op. cit.*, pls. 60, 61.

Interesting as these figures are, they are symptomatic of the decay of Irish Christian art. Ireland had been a striking contributor of unique genius to European Christian art in the days when the Christian creative spirit expressed its religious feeling in the elaborate production of small enshrining objects, in wonderfully illuminated manuscripts, and in metal-work and sculpture in highly decorated low-relief form, and in the complicated and detailed ornament of religious objects. With the development of the conception of a vaster, more monumental character for the church and church furniture, Irish art loses its supremacy. Nowhere is this more clearly shown than in the St. Manchan figures. Ireland had been supreme in metal-work, but these figures are among the first of her imitations of foreign Romanesque and Gothic styles, and mark the turning-point of her early art history. Hitherto she had been a leader: thereafter she showed herself content to follow.

E. S.

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[1] F. Henry, *op. cit.* ii, pls. 100, 107, 108, 109.

VII.—*Notgrove Long Barrow, Gloucestershire*

By Elsie Margaret Clifford

Read 12th March 1936

The Long Barrow lies one mile north-west of the village close to the northern boundary and near the north-west corner of the parish of Notgrove, Gloucestershire. It is situated in a field called 'Poors' lot', or 'Poors' allotment', by the road from Cheltenham to Bourton-on-the-Water, and is about a quarter of a mile east from Notgrove G.W.R. Station. It is one of the Cotswold long barrows of which there are two others about two miles away, while the Swell group is only four and a half miles distant. It is marked as the remains of a long barrow on the 6-in. Ordnance Survey, Gloucestershire XXVIII. 10, latitude 51° 53′ 20″, longitude 1° 51′ 40″.

The site, commanding a fine view in every direction, is almost at the crest of a bare upland ridge, at an altitude of nearly 800 ft., the ground rising slightly to the south-east and dipping to a valley on the north and north-west. The barrow lies on the Inferior Oolite, a formation separable into numerous subdivisions and here including in descending order Lower Trigonia Grit, traces of Snowshill Clay, and argillaceous Harford Sands. It has, as far as is ascertainable, no specific name, but lies on an old ridgeway known as Stanborough Lane, which runs from west to east, between Oxlease and Bourton-on-the Water.

The first mention ot the site is in Witts's *Archaeological Handbook of Gloucestershire* (Cheltenham, undated), pp. 82–3, where it appears as no. 24 in his list of long barrows. He excavated it in 1881 and the plan is on the margin of the map accompanying his handbook. Witts says:

> This interesting barrow is situated in the 'Poors' Lots', one mile north-west of the village of Notgrove and close to the new Railway Station on the Banbury and Cheltenham line. I examined it in April 1881 previous to a visit of the Cotteswold Field Club. I found the barrow was 140 feet long and that its greatest width was 78 feet. The entire crown of the tumulus had at some time been removed, exposing to view twenty large stones; these formed a series of chambers of the double cruciform type, similar to those at Uley and Nympsfield. On reference to the ground plan on the margin of the map, it will be seen that there is a central passage with two chambers on each side. The passage is five feet wide towards the south-east end, and four feet three inches wide towards the north-west, its entire length being twenty-seven feet. The first chamber on the west measured eight feet four inches by six feet; the second measured six feet four inches by

six feet; Chamber no. 3, somewhat different in shape, measured six feet across in each direction; and Chamber no. 4, nine feet six inches by seven feet.[1] The largest stone stands five feet above the original surface of the ground, being three feet long and sixteen inches wide. Chamber no. 4 had never been disturbed, though the other three had been cleared of their contents in past ages. Under a large flat stone I discovered portions of two human skeletons, lying in a contracted position; the skulls, which were lying towards the west, were broken into very small pieces. With these human remains were found two teeth and the pelvis of some kind of ox (probably *Bos longifrons*), a dog's tooth, a very perfect leaf-shaped arrow-head of flint, a black oval bead or amulet, one and a half inches long, composed of Kimmeridge Shale, having a hole pierced through the centre by a flint borer (this bead, though larger, resembles the one found in the Eyford Long Barrow, described in 'British Barrows', p. 519); lastly, thirty pieces of rough British pottery, half baked and belonging to the same vessel, one piece only showing the form of the rim.[2] The spaces between the upright stones in Chamber no. 4 were filled up with well built dry walls of Stonesfield Slate; the bottom of the chamber was paved with small flat stones well fitted together and forming a level surface.

At the annual meeting of the Cotteswold Naturalists' Field Club held at Gloucester on the 19th April 1881,[3] Witts exhibited the plan of the barrow, which he said was very similar in character to that of the Nympsfield tumulus. In the Notgrove barrow, which had been ransacked, one chamber remained undisturbed, and in this were found the remains of two individuals (the skulls much crushed) together with a flint arrowhead and a curious rude bead, said to be of Kimmeridge shale, but evidently intended for suspension as an ornament or an amulet. A bead of a very similar character figured in Greenwell and Rolleston's *British Barrows* was found in a barrow in the parish of Eyford in this county.

The Cotteswold Naturalists' Field Club visited Notgrove on 21st June 1881, and the account in the club's *Proceedings*, vol. viii, p. 71, includes the following: 'It had evidently been enclosed by a well built wall, which was well exposed as also the fine dry walling of the central passage.' An account was printed in the *Cheltenham Ladies' College Magazine* for February 1882, pp. 14–16, and was reprinted by the Cotteswold Naturalists' Field Club in vol. xviii, part 1, p. 43. It was scheduled as an ancient monument in August 1922.

Crawford, in his *Long Barrows of the Cotswolds*, numbered it on p. 116 in his list as no. 41 and published a fresh plan based on an original survey. Writing in 1920 he says, 'The barrow is overgrown with rank grass but no trees'; and adds, 'It would be well worth while to put it in order and place it under adequate protection.' It was so overgrown at that time that he could not see the stones 16, 15 N, and 7 N. In 1934 the general condition of the barrow was deplorable, the site being completely covered with grass and gorse-bushes, while a large ash-tree blocked the east end. The monument was clearly in need of urgent attention, and this was emphasized when the Bristol and Gloucester Archaeological Society proposed to visit it during their Spring Meeting in 1934. The present writer was asked to describe it, an almost impossible task owing to the condition of the barrow at that time. For the purposes of this visit the chambers of the barrow were cleared; its general condition, in common with many others, was deplored; and an appeal made to fence and put them in order. In response to this appeal, Sir Alan Anderson of Notgrove Manor very kindly offered to fence the Notgrove barrow. An area was agreed upon with H.M. Office of Works, and while digging post-holes for the fence, dry-walling was discovered in two places. Mr. Reginald Smith was consulted, after which excavations were made in October and November 1934, and August, September, and October 1935.

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[1] Called A, B, C, and D on present plan.

[2] These objects were left by Witts to the Cheltenham Museum, to which the present writer has presented the material found in this excavation.

[3] *Proc. C.N.F.C.*, viii, 63.

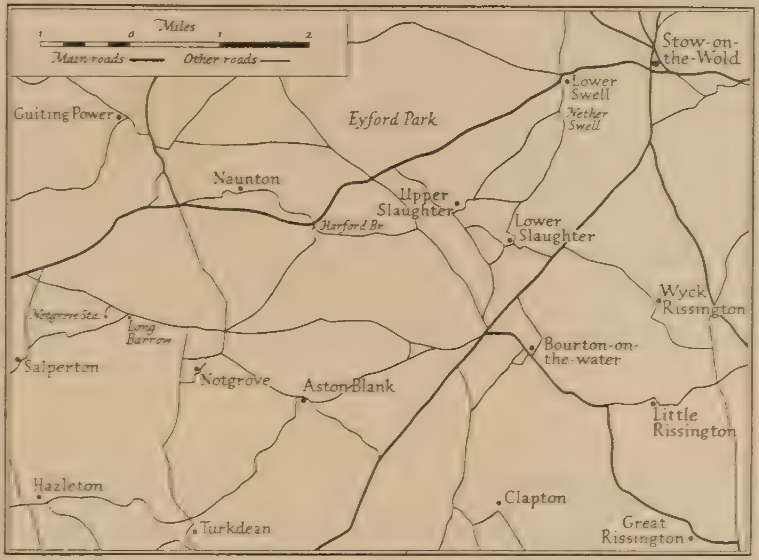
Miles
1
0
1
2
Main roads
Other roads
Stow-on-the-Wold
Lower Swell
Nether Swell
Guiting Power
Eyford Park
Naunton
Upper Slaughter
Harford Br
Lower Slaughter
Wyck Rissington
Notgrove Sta.
Long Barrow
Salperton
Notgrove
Aston Blank
Bourton-on-the-water
Little Rissington
Hazleton
Clapton
Turkdean
Great Rissington

Fig. 1. Map showing position of Notgrove Long Barrow

The site is owned by the overseers of Notgrove, it being left in trust for the poor of the parish for ever for the purpose of growing firewood, but that condition is now commuted; the land is let and the rent used for emergencies in the parish.

The folklore attached to the Notgrove barrow is common to many others of many ages. It is that perseverance in digging will be rewarded by finding the gold coffin which is undoubtedly in the barrow, and this may account for the curious holes which have been made on the site, apparently without reason. The village people believe the coffin is there.

Notgrove is a long barrow with an ante-chamber, central passage, and five chambers. It is of double cruciform plan, formed with alternating megalithic slabs and dry stone-walling, approached from the east end by a horned entrance with double walls, and the whole was roofed. In the centre is a circular, domelike structure, 23 ft. in diameter, in which was a cist containing human bones. The western portion of the barrow has been so robbed that almost all evidence of construction has disappeared. The inner retaining wall appears to have extended the whole length of the barrow on both sides. The length, as far as is ascertainable, is 160 ft. and its greatest width 80 ft.

At the east end of the barrow there is a shallow, filled-in ditch. At the south and west there has been extensive quarrying, and in some places the outer edge of the barrow has been cut away. The term 'quarrying' is used when the site itself has been destroyed, and 'robbing' when only the material of the barrow has been carted away. On the north side the barrow has been extensively robbed, and to a lesser degree on the south side, where the break through the covering of the mound could be observed in each of the six sections which were cut. This covering of the mound exists along a great part of the south side, while on the north it has entirely disappeared. At the west end the tail was completely cut through, the site itself was quarried away and a great deal of the construction removed, only a small piece remaining on the south side, but more was left on the north.

Disturbance and investigations in Notgrove long barrow may have begun in early times, and it may be that the roof of the ante-chamber (probably close to the entrance) was broken through. The ante-chamber was robbed of two orthostats, the door-jambs, the lintel, and the stone which closed the entrance; the two remaining orthostats were dislodged, one of these being removed from its socket and cast on the floor and the other pushed backwards towards the north. The ante-chamber must have been filled in almost immediately after this extensive robbing, otherwise a newly discovered orthostat, no. S 2, could not be in the fresh, unweathered condition in which it was found. The ante-chamber was completely buried, and its existence was not suspected until these excavations took place. The material with which it was filled was perhaps that which had formed the roof over the central passage and the chambers themselves. No modern object was found in this material, in sharp contrast to the other disturbed areas, where numerous finds of different centuries were made. Moreover, the area east of the entrance has never been disturbed, there being no indication from the ground-surface that there was a horned entrance to the barrow; and this horned entrance was never suspected until it was discovered

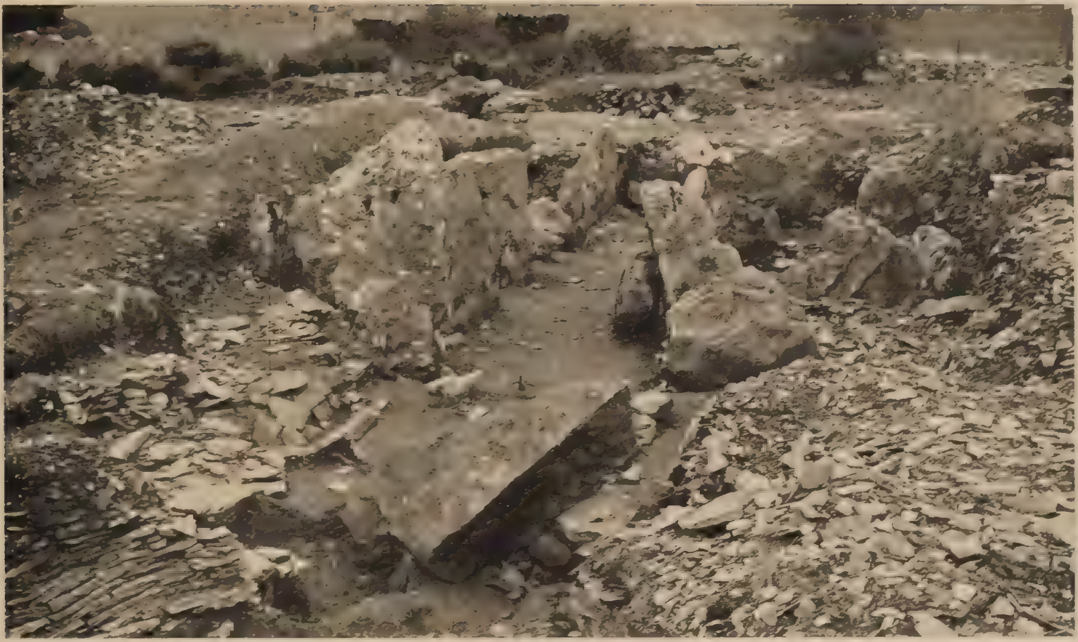

Fig. 1. View from NE. showing dry-walling of inner wall of south horn and newly discovered orthostat in foreground

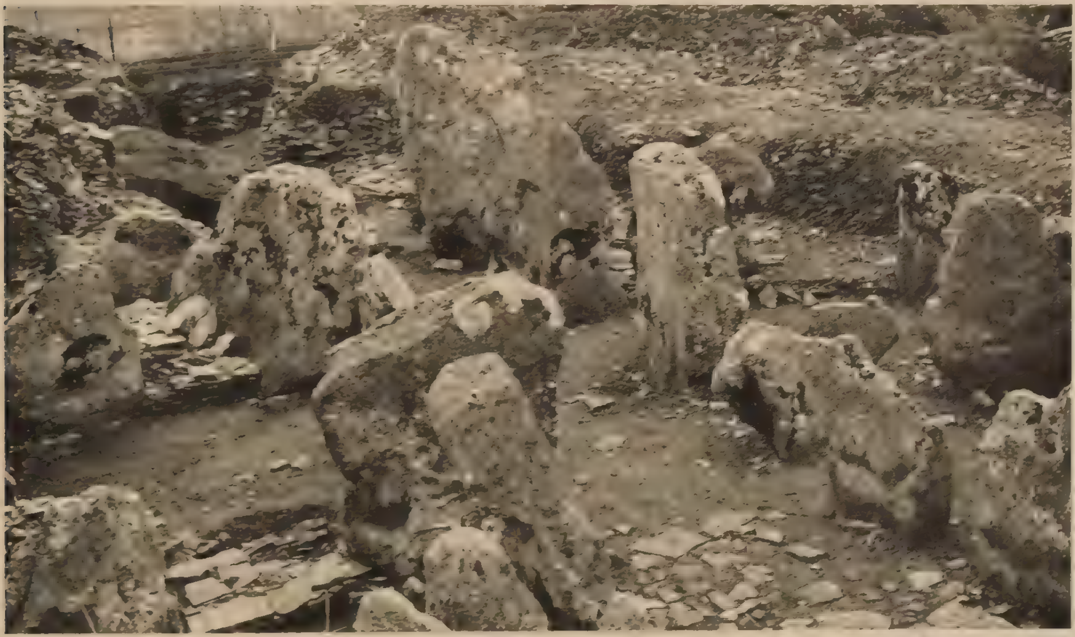

Fig. 2. View from NW. showing paving in Chamber E, dry-walling in Chamber D between orthostats N 5 and N 6, and dry-walling in Chamber C with original construction behind (left foreground)

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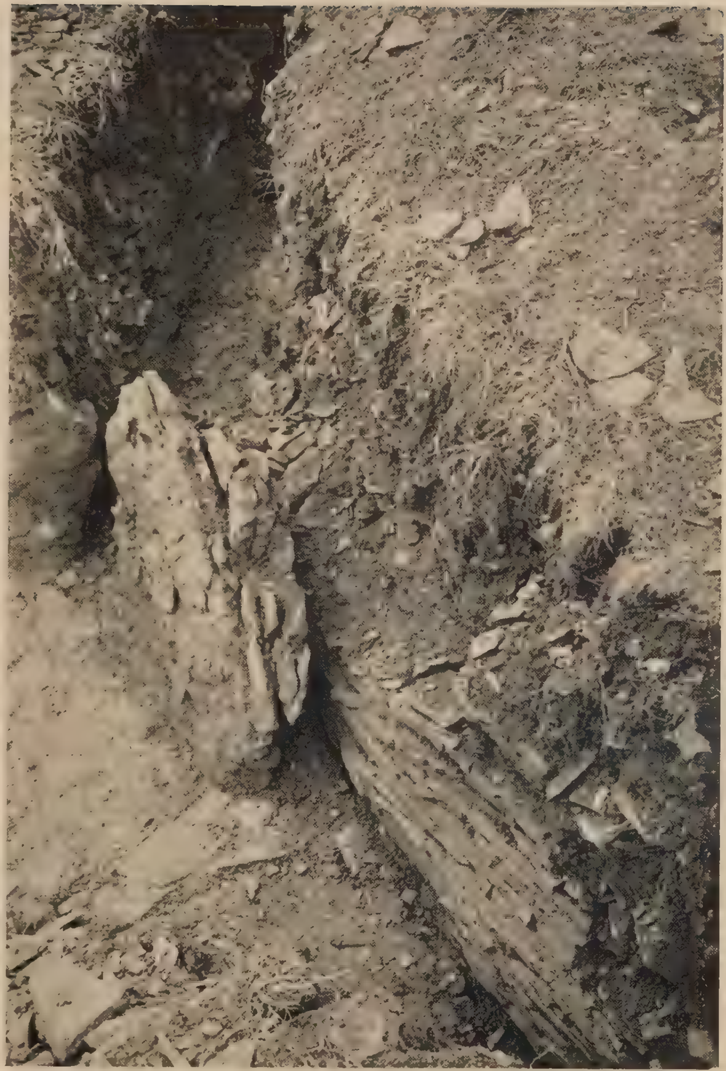

Fig. 1. Orthostat 16, Chamber E, showing dry-walling of central dome behind orthostat

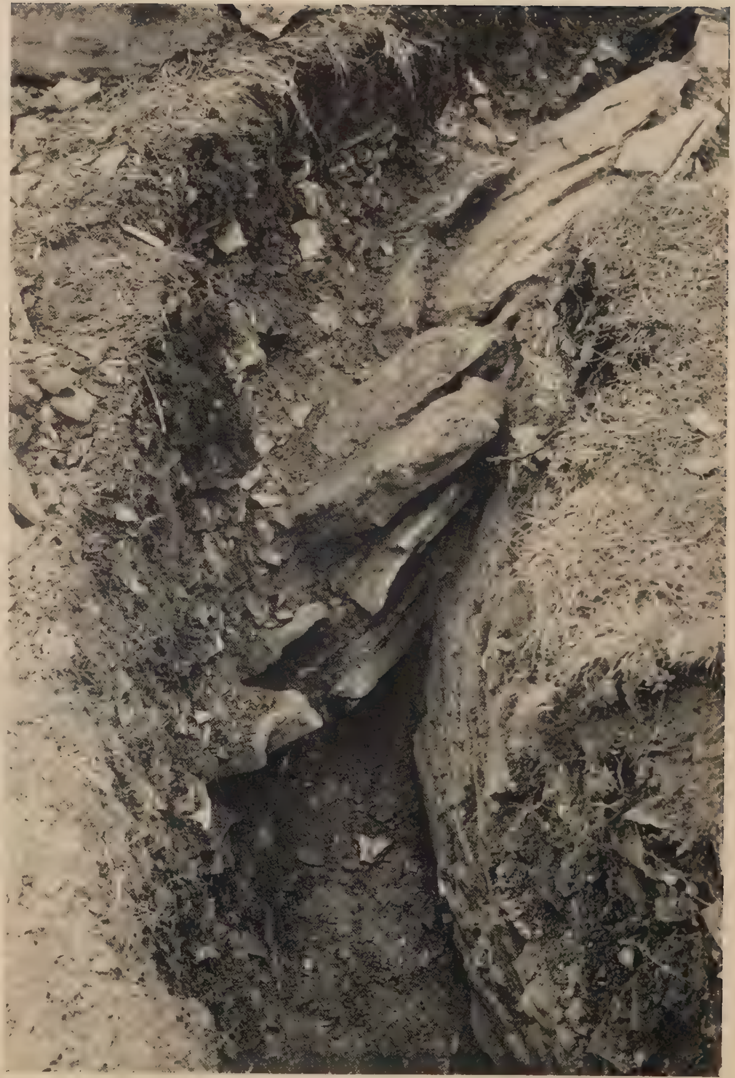

Fig. 2. Dry-walling of central dome with large protecting stones against it

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in 1934. There was nothing whatever to indicate that the barrow did not end at the point indicated by Witts and Crawford. In this early robbing the large stones were removed, whereas the later robbers removed walls and constructional material wholesale. The barrow was used as a 'quarry' from which it was easier to take stone than to dig it elsewhere. This removal of large stones is confined almost entirely to the ante-chamber, where only two remain, whereas in the central passage and the chambers themselves, which are formed of 25 orthostats, 24 remain, although not all are in good condition.

These later robbers, as well as those who may have investigated the monument at various times, account for the miscellaneous collection of objects listed below, which were all found on the surface or in the disturbed material within the barrow:

Two sherds of possible Beaker ware.
Sherd of Early Iron Age pottery.
Sherd of Early Iron Age or Romano-British pottery.
Coin—denarius of Hadrian about A.D. 127.
Piece of Roman window-glass.
Two scraps of Roman wall-decoration.
Pieces of glass, iridescent, undatable.
Scrap bronze—patch from bowl (?).
Piece of brick—sixteenth or seventeenth century.
Iron stud with incised pattern.
Amethyst with claw setting of silver gilt about A.D. 1500.
A token of the seventeenth century used as farthing; has initials 'H. C.'
Neck of sack-bottle, late seventeenth century.
Indeterminate ware, probably medieval.
Glazed pottery, medieval or later.
Fragment of glazed pan, probably eighteenth century.
Silvered button, eighteenth century.
Part of buckle, bronze gilt.
Key, probably eighteenth century.
Iron fragment, ? blade of pocket-knife.
Hand-made 'bill-hook'.
Pottery of the nineteenth century.
Bullet, modern.
Fragment of lead.

The site of the barrow is overlaid with a clay bed, which is in all probability the old soil, augmented in places with supplies of clay from elsewhere; but all is of local origin, to judge by colour and texture. It is red-brown, containing a small proportion of quartz grains and pellets of yellowish calcareous matter, probably fragments of limestone. In between the inner and outer walls, the clay has an average depth of 12 in., elsewhere of 6 in.

The stone of which the barrow is made could all be obtained locally, but none was quarried on the site. There were originally 31 orthostats, but only 25 now remain. Of these, 13 are made of Yellow Guiting stone, 11 of Great Oolite limestone, and 1 of Stonesfield slate; the last-named material is extensively used in the construction of the barrow. Guiting stone is used mainly for the large blocks which compose the body of the mound; while the large stones at the centre of the dome were exclusively of the top or Bored Bed of the Notgrove freestone, and this was faced with fine thin Stonesfield slates. The constructional sequence appears to be as follows:

The site was demarcated by a shallow ditch cut through the soil into the underlying strata. The removal of the turf exposed a red clayey soil. To level up the site this was augmented by similar material, which also filled the ditch. The first structure erected was a closed cist formed of slabs set vertically in the clay floor. Within this was buried a man sitting crouched with his feet towards the north-east. The cist was covered by a mound 23 ft. in diameter revetted with a wall of dry masonry. The face of the wall was battered inwards. The core of the mound was formed of large interlocking blocks of stone corbelled over the top of the cist. The orthostats of the passage, chambers, and antechamber were next set in position, the interstices being filled with dry-walling. The mound covering these and the central burial and delimited by the inner wall was next built. It is reasonable to assume that this was a separate structure, as there is no trace of bonding between the inner and the outer walls. The latter was next erected, and it should be noted that it could only be traced for a short distance beyond the NE. and SE. angles. It has, however, been assumed that the small trench cut in the surface of the clay marks the position of the robbed continuation of this wall. After this the monument was surrounded by a quantity of extra revetment-material, and the whole monument was then covered by a mound of earth and stones. Finally, the blocking of the forecourt between the horns disguised the shape of the east end of the barrow.

The dry stone walling within the chamber is used to fill up the spaces between the orthostats. It is carefully made of picked material (Stonesfield slate) and is very neatly fitted against the stone slabs. It is a single construction with appearance as its object, as it is not bonded into the body of the mound except in chambers A and D, where it faces the structural features used for strengthening the mound, as well as for dividing the two chambers.

Three stones, nos. N 9, S 8, and S 10, have been re-erected, all their sockets having been discovered. A socket for a further stone in chamber B, S 13, was also discovered. The whole presents a very neat and well-balanced plan for which there is no close analogy. It may here be stated that rebuilding in any form was not observed at any point in the barrow, but disturbed material has been scattered over the site generally at different times. The axis of the barrow is assumed for the sake of simplicity to be east and west instead of east-by-south and west-by-north.[1]

The description of the barrow follows under six headings:

(*a*) Central Dome.
(*b*) Ante-chamber, central passage, and chambers.
(*c*) Walls, forecourt, etc.
(*d*) Extra-revetment material, blocking of the entrance, and covering of the barrow.
(*e*) Finds.
(*f*) Typology, dating, and conclusions.

I have to thank Mr. Reginald A. Smith, Mr. L. Richardson, Miss Dorothea Bate, Mr. A. J. E. Cave, Miss Simpson, Mr. H. Beck, Mr. A. S. Kennard, Mr. Stuart Piggott, and Mr. Thos. Overbury for reports on material from the barrow; and Sir Alan Anderson, Mr. Oliver Davies, Mr. O. G. S. Crawford, Mr. C. W. Phillips, Dr. Van Giffen, Dr. Bersu, and Mr. C. I. Gardiner for their advice and help; while Mr. W. J. Hemp's practical interest and help was invaluable. To Mr. C. A. Raleigh Radford a special debt is due for unstinted counsel, help, and encouragement; and I am indebted to my brother-in-law, Mr. E. Camm, for the whole of the plans. I am also grateful to the friends who actually worked in the field, to the owners of the site for permission to excavate, and to H.M. Office of Works for their sanction and interest.

CENTRAL DOME

The central dome was the first structure built. It is so close to orthostat no. 16 that it would have been impossible to build the dry wall seen, if that stone had already been in position (pl. XXXI, fig. 1). The central dome is 23 ft. in diameter, and about half of the encircling dry wall was exposed. In the 1934 excavations a wedge-shaped cut was made into the interior of the structure, leaving the dry-walling undisturbed. In 1935 it was decided to remove more stones from the centre, and so the cist was discovered. The central dome was very carefully built (pl. XXXII, fig. 1). The stones were systematically placed, the lowest layer being carefully fitted against the cist. The higher layers were placed with an upward tilt to support the thrust of the corbelling over the cist, the whole resembling an early form of dome. Very fine and thin Stonesfield slates were used for the facing, the size of the slates increasing towards the centre. At 3½ ft. from the outer face they were bonded into the large stones forming the main mass of the central dome. The dry-walling stood to a height of 2 ft. 6 in., and the wall has a batter of 6 in.

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[1] Thurnam stated that the orientation of long barrows was east and west in two out of three or perhaps three out of four cases. In the Cotswold area there are twenty barrows orientated east and west, which is two out of five—the average orientation for the fifty barrows being very nearly south-east.

Large slabs of stone, in some cases as long as 2 ft. 6 in., were placed obliquely against the outer wall of the dome for a distance of 2 ft. 9 in. either to protect or support the fine dry-walling of which it was composed (pl. XXXI, fig. 2). In order to prevent these slabs from slipping, large blocks of stone were placed against them for a distance of 4 ft. from the central dome. The whole arrangement showed great concern for the safety of the central structure.

The cist was formed of 12 overlapping slabs of Stonesfield slate standing on edge, the slabs being lightly set in the ground and held in position by wedges of stone, a method also used for the orthostats in the chambers of the barrow. The cist is irregular in shape, measuring 4 ft. 4 in. from east to west, and 3 ft. 9 in. from north to south. It was originally roofed by slabs of Stonesfield slate, laid flat on the uprights. The corners remained in position when the roof collapsed. Above this the mound was probably completed by a rough corbelled dome. With the fall of the roof some of the stones belonging to the body of the structure were displaced, but the fall did not disturb a slab on which there were several layers of stone forming an oblong 20 in. by 13 in. (pl. XXXII, fig. 2). These had rounded edges and were extensively burnt. The limestone has fallen into pieces, but the shape and the red colour due to the fire are still discernible.

The inside of the cist was carefully excavated by Mr. Radford and the writer, and human bones belonging to a robust male, between 50 and 60 years of age, were discovered, together with two flint flakes. In Mr. Radford's opinion the arrangement of the bones shows that the man was sitting in a crouched position with both feet at point 4, when the roof fell in, hitting the back of the neck and skull. The bones were scattered in all directions (fig. 2), the left leg fell outwards, the toes remaining in position. In the writer's opinion there is an element of doubt whether the cist had been opened before, but Mr. Radford believes that it had not. A denarius of Hadrian (*c.* A.D. 127) was found 18 in. from the surface in the northern half of the mound where the soil was deeper and appeared to have been disturbed. The southern half had certainly never been disturbed.[1]

At Belas Knap there was a feature which may embody the same idea as the central dome at Notgrove. In the centre at point F there was a broken circle of stones with a diameter of about 7 ft. The soil round was deeply impregnated with wood ashes, but no remains of any sort were found (*Proc. Soc. Ant.*, ser. 2, vol. 3, p. 279). Sir James Berry records (*Trans. Bristol and*

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[1] Evidence of rifling in the Roman period has been found in the following long barrows in this district: Bown Hill, Belas Knap, Hetty Pegler's Tump, Hoar Stone, Enstone, Randwick, Windmill Tump (or Rodmarton), Cow Common.

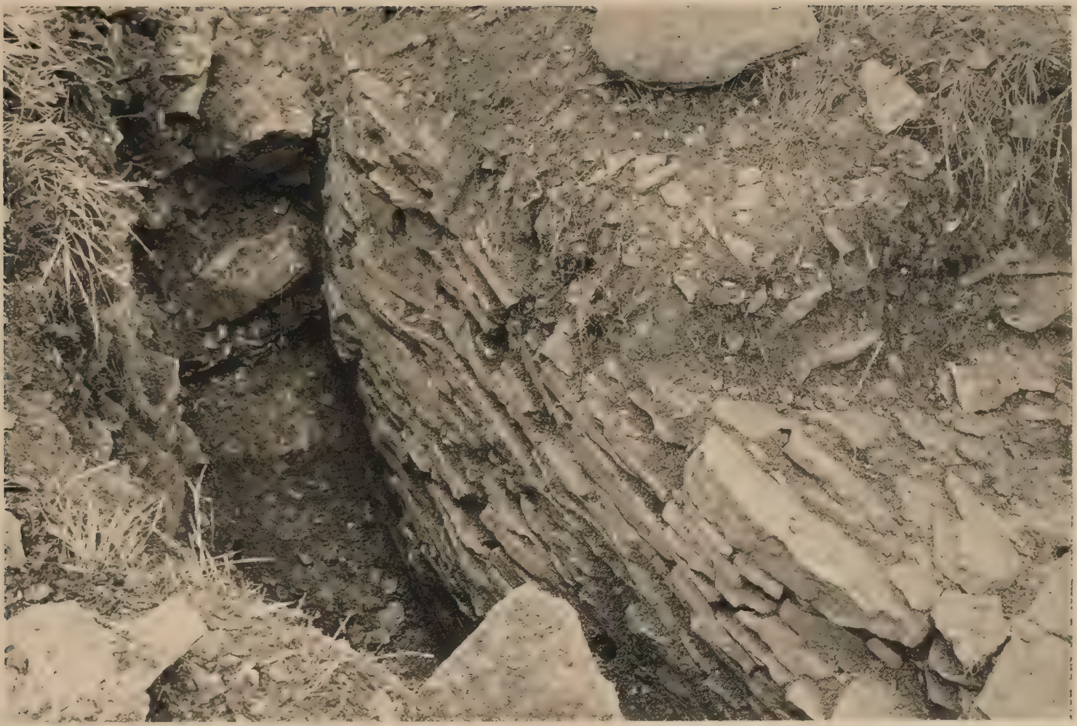

Fig. 1. Dry-walling of central dome

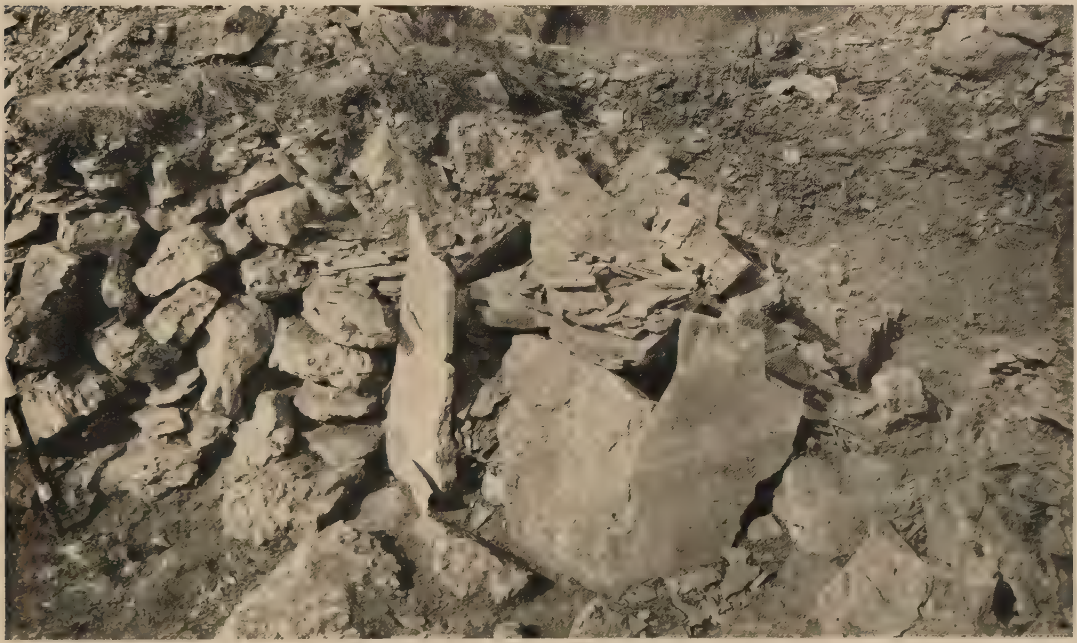

Fig. 2. Cist within the central dome, with burnt stone slabs on top

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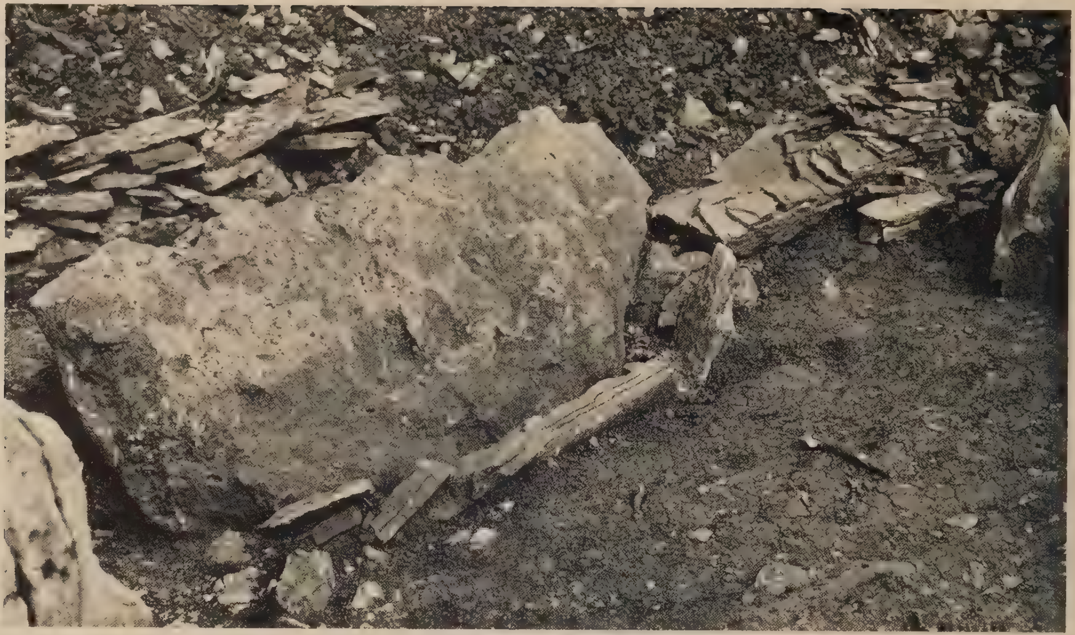

Fig. 1. North side of antechamber: orthostat N 3 with packing-stones and dry-walling on right

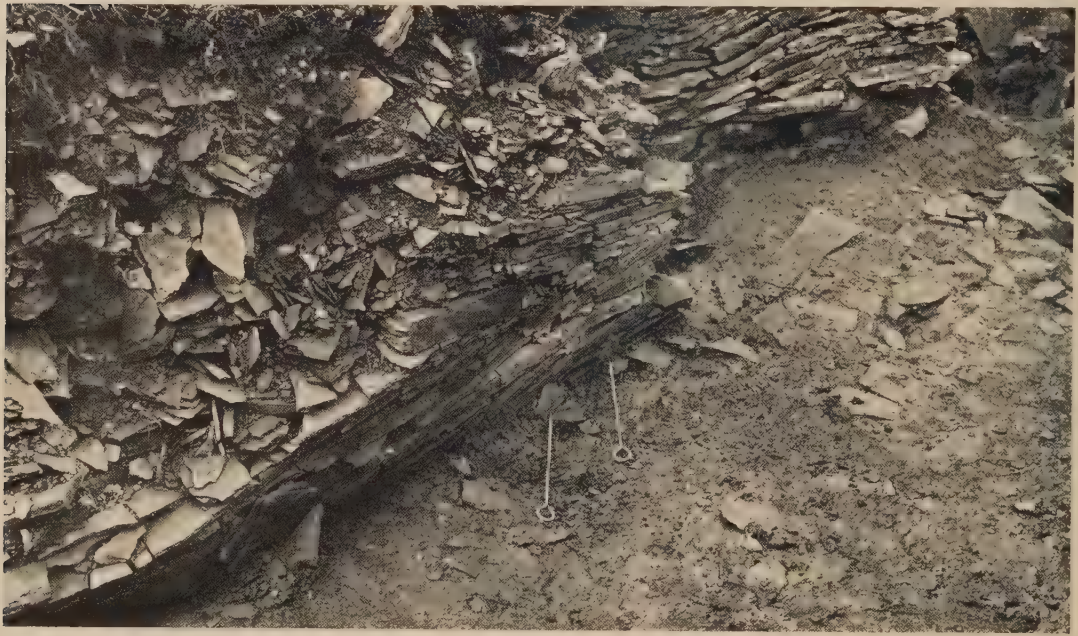

Fig. 2. Inner and outer walls of south horn: pointers show small marking-out stones; larger stones to left mark limit of extra-revetment material

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Gloucester Arch. Soc., vol. 51, p. 278) that he found 'a large stone roughly squared had been laid with its upper flat surface horizontal, being wedged up in this position by two smaller stones beneath it. Around this central point other massive stones had been laid concentrically upon and around it, resembling a rudimentary, but of course, not a true arch.' Sir James must have exposed the last remains of the circle, which would appear to have been approximately on the central line and equidistant from the dummy entrance and Chamber E at the opposite end. Belas Knap may be a degenerate though nearly contemporary form of the Uley-Notgrove-Nympsfield type of barrow, and possibly this small circle or broken circle represents the larger and finer structure found at Notgrove.

At West Tump long barrow there were 5 flat stones arranged in the shape of a semicircle, on which the contracted skeleton of a young woman and probably that of her baby had been placed. These stones were at the end of the chamber, 24 ft. from the outside wall and 82 ft. from the southern horn.[1]

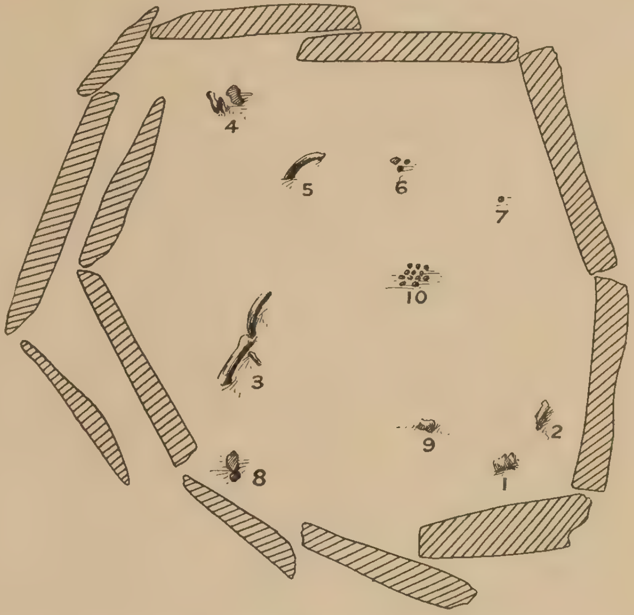

Fig. 2. Cist within the central dome, showing position of bones

1. Vertebra. 2. Neck-bone. 3. Leg-bone, finger-bone, and rib. 4. Bones of foot and fragment of skull. 5. Rib. 6. Tooth and fragment of jaw. 7. Teeth. 8. Fragments of skull. 9. Wrist-bone. 10. Teeth

In the neighbourhood of the Scamridge Dykes, in the parish of Ebberston (North Riding of Yorkshire), Greenwell excavated a barrow in which he discovered a somewhat similar structure. He says: 'At its west end the line of rubble expanded into a regularly constructed cairn of stones, carefully laid in order from a central point and placed upon the stratum of clay already mentioned. The diameter of this cairn was 18 ft. and its centre was 49 ft. from the east end of the barrow. There was nothing found beneath it, nor was there any indication that a body had ever rested there. The cairn itself, being enclosed within the larger mound, must have been first constructed; and no doubt was made at the same time as the line of oolitic rubble of which indeed it seems to form a part.'[2] Mr. Hemp observes that the 'line of rubble' seems to have been the filling of a trench left when the barrow was constructed. The bones would be placed in this trench replacing the more normal chamber which does not exist. It may be possible to read his statement that it 'expanded into a cairn of stones' as a description of the same sequence as found at Notgrove, where the chambers of the barrow were built close up to the walls of the dome. If this is the case, Mr. Hemp would look on the enclosing wall of the Notgrove dome as a structural refinement, perhaps pointing to an earlier type of plan, though not necessarily an earlier date.

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[1] *Trans. Bristol and Gloucester Arch. Soc.*, 5, 205-7.

[2] *British Barrows*, 487.

At Skendleby in Lincolnshire, Mr. C. W. Phillips has excavated an earthen long barrow where the central feature[1] is a pit, and at Bryn Celli Ddu[2] there was also a central pit. These records indicate that the barrow-builders often attached importance to the central point of the mound, and in all probability they represent different versions of a single idea which doubtless had some ceremonial significance.[3]

The Ante-Chamber, Central Passage, and Chambers

The stones which formed the door-jambs have both disappeared. Their carefully made sockets were found with the packing-stones still in position. The lintel has also gone and there is no evidence to show how the entrance was closed; but by analogy with other monuments one would expect a single stone, about 3 ft. 6 in. wide. The dry walls of the horned entrance end abruptly at the point where they would have met the door-jambs.

Inside the barrow, immediately beside the door-jambs, are two more sockets for orthostats. The southern stone, found lying over its socket in front of the doorway, is of yellow Guiting stone and its fresh condition shows that it has never been exposed to the weather (pl. xxx, fig. 1). The fine dressing suggests that the remaining orthostats were shaped before erection. They are now so much weathered that no evidence remains, nor could incised marks be detected. The socket for the stone opposite the newly discovered orthostat was found with the flat stones of the mound neatly built round it. The same method was employed on the south side, dry-walling connecting these orthostats with the next pair. In this case, the northern stone remains, with its packing-pieces in position. It lies at an angle pushed out towards the north (pl. xxxiii, fig. 1). The other stone has disappeared, but its socket, neatly lined with the packing-pieces, was discovered. More dry-walling connects these with the next orthostats where the passage starts. It has already been noted that there are but 2 orthostats remaining in this ante-chamber, 6 stones, including that closing the entrance, having disappeared; while those which form the central passage and the chambers are, with one exception, complete. There are two or three pieces of Stonesfield slate in position on the south side: these are probably the remains of a bench (pl. XL, fig. 1). On the north a mass of similar material may have served the same purpose.[1]

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[1] Not a definite pit in centre: near centre, bodies laid on a stone bed. *Archaeologia*, lxxxv, 37–106.

[2] *Archaeologia*, lxxx, 179.

[3] The circular hut recorded at Lamborough Banks (*Trans. Bristol and Gloucester Arch. Soc.*, 56 (1934), pp. 95–8) does not furnish any real analogy with the central dome at Notgrove.

In the centre of the floor near the west end of this bench was a circular patch of burnt earth, under which there was stone paving below the general level of the floor (pl. XL, fig. 1; cf. Capel Garmon). The floor is of clay, but was probably paved. Witts found the floor of chamber D 'paved with small flat stones well fitted together and forming a level surface'. Chamber E retained paving which appeared to be original, and the whole of the interior may have been finished in this manner. The whole floor has been examined, and in the clay, which formed the floor, most of the objects were found.

This ante-chamber has been much damaged by the roots of the ash-tree. It is wider than the passage (about 8 ft. 6 in.), and the slabs forming the roof probably rested on large corbels. Twelve feet of original mound survive on the south side, and there is a small piece near the jambs of the north door.

Close to orthostat no. N 4, two scraps, possibly of Beaker ware, were found on the clay floor, and sherds of Neolithic A pottery were found under the fallen material, which may have formed the bench on the north side. In the clay at the entrance was one rim possibly of Neolithic A 2 ware and of shelly texture, very like that from Abingdon. A piece of similar pottery was found under the orthostat, which had fallen across the entrance.

The beginning of the central passage is defined by stones N 4 and S 4. This is the point formerly believed to have been the start of the barrow, and is so shown on Witts's and Crawford's plans. Stone S 4 is the tallest in the monument; it measures 6 ft. 5 in. above ground-level, and is 2 ft. thick. With the exception of stone S 5 all the orthostats are deeply set in the ground. In some cases excavations to a depth of 12 in. failed to reach the base. They are wedged with stones used as packing, and S 5 is supported at the east end by two large blocks of stone, placed on the ground, one of which measures 1 ft. 6 in. by 1 ft. 4 in. These stones came from the Bored Bed of the Notgrove freestone, the material which otherwise seemed to be used exclusively in the centre of the dome. These supporting stones were needed, as S 5 has an overhang of 2 ft. 3 in.; and although it is 1 ft. 5 in. thick it may have been top-heavy. Unless weathering has considerably altered the shape of the orthostats, it cannot be said that they were chosen because they were of a suitable shape for use alternately with stretches of dry-walling, a feature noted at Capel Garmon.[2] The size and shape of the hole in N 9 is in the same relative position, is practically the same size, and is the same shape as that in the Long Stone at Minchinhampton, which probably formed part of the long barrow.[1]

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[1] Bryn Celli Ddu and Orkney furnish parallels for this; *Archaeologia*, lxxx.

[2] *Arch. Camb.*, lxxxii (1927), 37.

The floor is of clay. In chamber E, at a slightly higher level (3 in.) than the rest of the passage, this was covered with Stonesfield slates. The dry-walling of the central passage must have been fairly complete when Witts wrote in 1881, but it has almost entirely gone, only its lowest courses remaining in chamber E between 16 and N 15. These features were preserved by the debris which nearly filled this chamber. Chamber E, which is formed by orthostats 16, N 15, and S 15, showed much evidence of fire. In it was discovered almost the complete skeleton of a very young calf.[2] The bones, however, showed no signs of having been heated. In the clay immediately under the paving, human and animal bones, a piece of Neolithic A pottery, and a flint flake were also found. The length of chamber E, the passage and the ante-chamber, is 42 ft., the greatest width of the ante-chamber being 8 ft. 6 in., and of the passage 5 ft. 4 in. Most of the objects were found in the central passage, including the bead, skewers, bored stone (fig. 3), and sherds of Neolithic A pottery.[3]

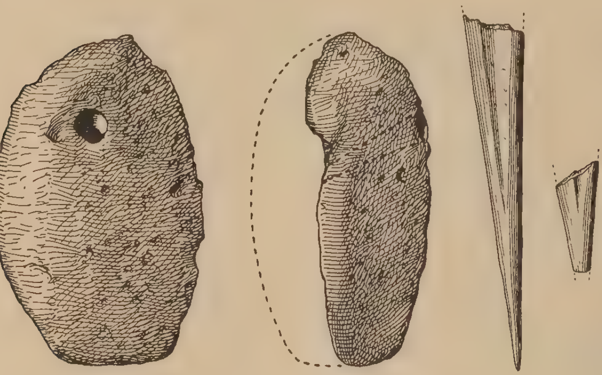

Fig. 3. Bored stone and bone skewer ($\frac{1}{1}$)

Chambers A and B are on the south side of the passage, C and D on the north, and E is a continuation of the central passage.

Chamber A, measuring 6 ft. by 6 ft. 3 in., is formed by orthostats S 6, S 7, S 8, and S 9. The plan is very similar to that of chamber D. Ten or eleven courses of the dry-walling which Witts mapped in chamber D stand to-day; but he did not realize that this marked the limit of the chamber, the space between it and chamber C being constructional, doubtless to strengthen the barrow at this point as well as to form a division. Next to this dry-walling is a decayed orthostat of Stonesfield slate.

In view of this newly-made plan of chamber D, search was made in chamber A for similar evidence. There were found the socket of S 8 (pl. XXXIV, fig. 1), the remains of the body of the mound between S 7 and S 8, faced with dry-

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[1] Crawford, *Long Barrows of the Cotswolds*, 113.

[2] A calf was also found at Bown Hill.

[3] Bone tools or ornaments have been found in Bown Hill (*L.B.C.*, 84), Belas Knap (*ibid.*, 77), Hetty Pegler's Tump (*ibid.*, 104), Pole's Wood East (*British Barrows*, 527).

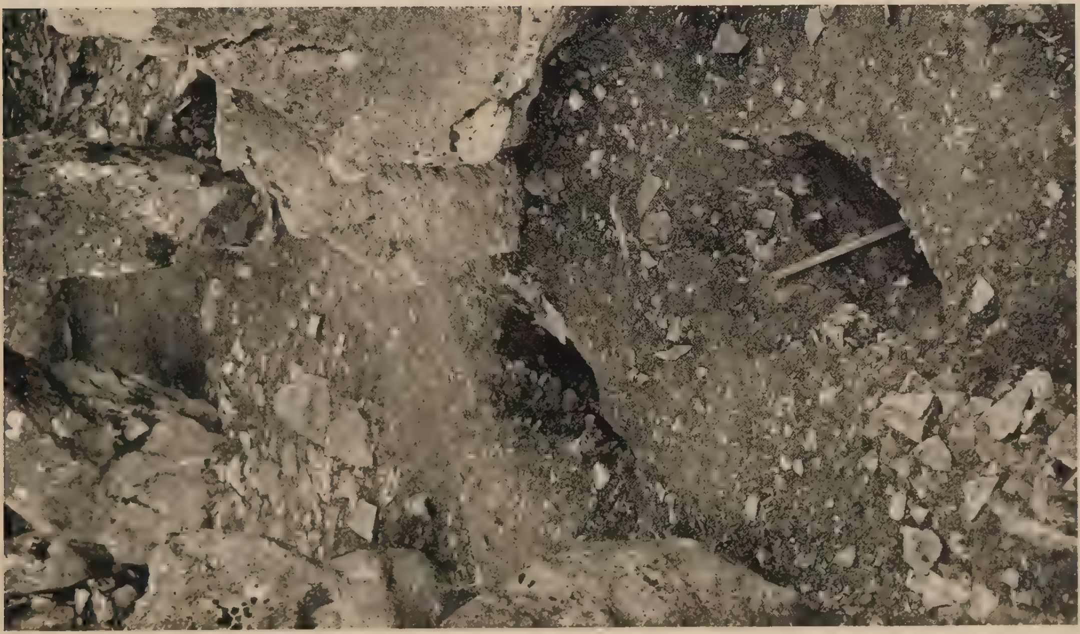

Fig. 1. Sockets of orthostats in Chambers A and B

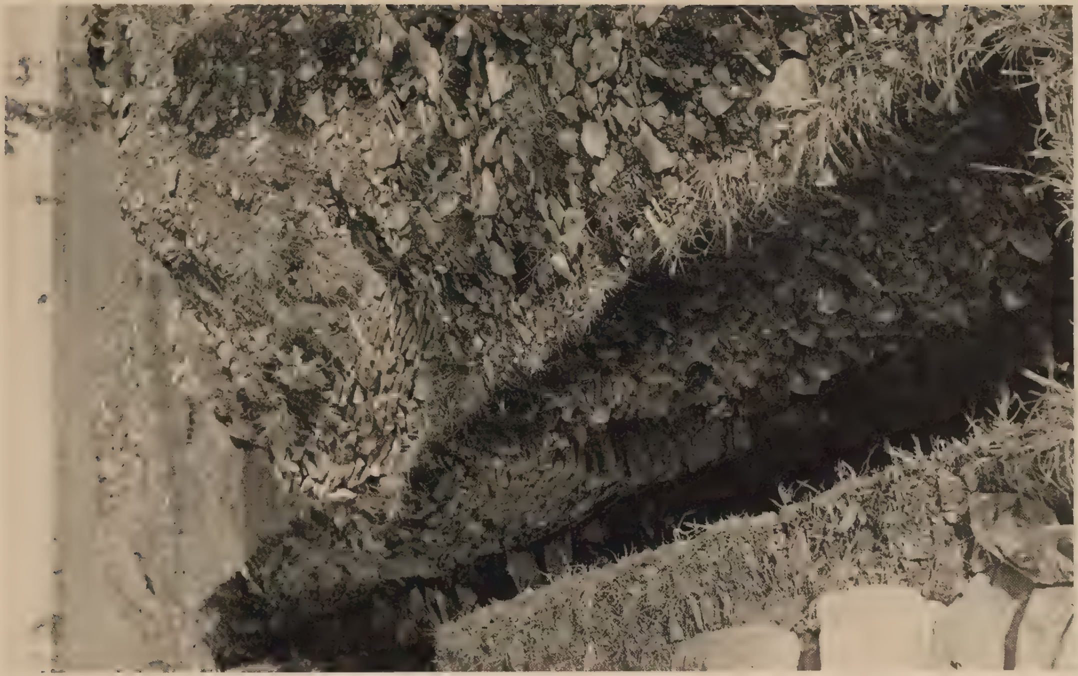

Fig 2. A length of inner wall on North side

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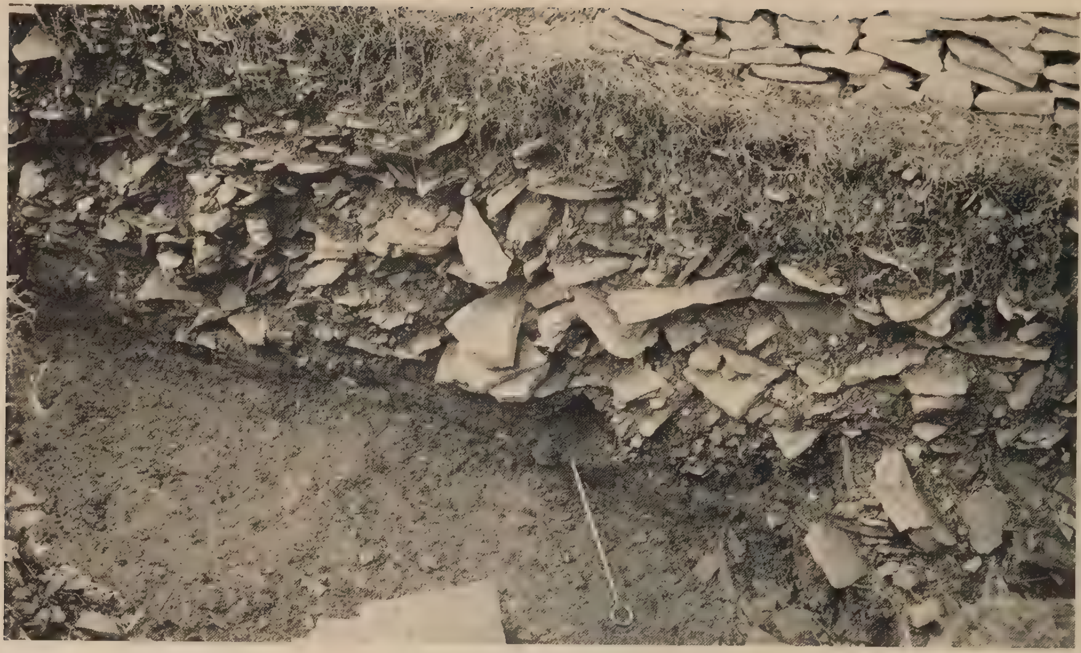

Fig. 1. Trench, marked by pointer, cut in clay surface which indicated line of second wall

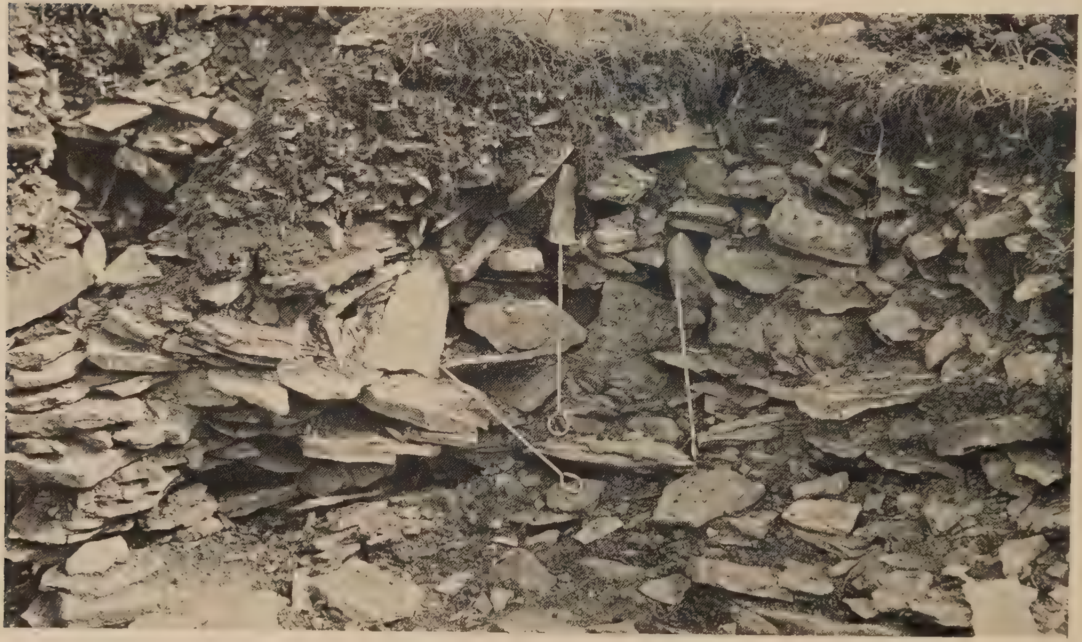

Fig. 2. Stones, marked by pointers, placed in vertical and oblique positions to take thrust, in original construction on south side of ante-chamber

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walling as in chamber D, and between S 6 and S 7 the remains of the usual dry-walling, making this chamber very similar to D. A large burnt patch, found near the entrance to chamber A, extended into the passage, proving that this chamber had no sill. S 9 is the stone which Crawford thought might have been artificially shaped to form a 'port-hole', and that, even if not so shaped, it was deliberately chosen to form the entrance to the first chamber on the south side.[1] Human and animal bones were also found in chamber A.

Chamber B measures 4 ft. 5 in. by 6 ft. 1 in., and is formed by orthostats S 11, S 13 socket (pl. XXXIV, fig. 1), S 14, and S 12. On the west side the new plan does not agree with Witts; but in all probability it was supposition on his part to map two stones there, as, despite diligent search, no trace of a socket corresponding to his second stone on the west side could be found. The present plan conforms reasonably enough to that of chamber C opposite. On the south side are large stones forming the body of the mound, and on the west side the outer ring of those surrounding the dome. Human and animal bones and four flints were found here. In the modern material between the orthostats and the body of the mound was a farthing token of the seventeenth century with initials 'H. C.', and on the floor of the chamber a modern lead bullet.

Chamber C is unusually complete, and the overhanging orthostats make it appear much smaller than it really is. It measures 5 ft. 1 in. by 5 ft. 3 in., and is formed by orthostats N 10, N 11, N 13, N 14, and N 12. The lowest courses of dry-walling exist in three of the four spaces. Human and animal bones were found here also.

Chamber D formed by orthostats N 5, N 6, N 7, N 8, and N 9 was found intact by Witts. It measures 6 ft. 7 in. by 6 ft. 7 in. instead of 9 ft. 6 in. by 7 ft. as planned by Witts, the dry-walling at an angle being the facing used for the constructional work behind it, and the decayed orthostat which had joined it being also part of the division. It is the most interesting because still so complete. Exactly in what condition Witts found it is not clear, for one account says it 'was undisturbed', another that 'it had not been much disturbed', and another that 'it had never been disturbed', but Witts distinctly says the entire crown of the tumulus had been removed. Here were found a bead of Kimmeridge Shale, a very perfect leaf-shaped arrow-head, which Mr. Reginald A. Smith has shown to be typical of long barrows,[2] 30 pieces of pottery of Neolithic A type, 2 human skeletons, and some animal bones. The bead has a parallel in one from Eyford in the British Museum. The dry stone-walling is carefully built, and made of picked material, but the flooring has entirely disappeared.

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[1] At Rodmarton long barrow in chamber B there is a port-hole, and in that chamber there was a considerable fire.

[2] *Archaeologia,* lxxvi (1927), 81.

The Walls

The revetment of dry stone-walling forms practically a straight line, and is made of Stonesfield slate. The material is much larger than that used at Belas Knap long barrow. The corners are made of blocks of stone, and care was taken to give a wide sweep on the lowest courses. The dry stone masonry of the outer wall of the horned entrance was built of thinner slates than the inner. The layers are in many places no thicker than a stout postcard, and on exposure they immediately fall to pieces. These outer walls were built without a batter, but the inner walls at these points had a batter of 8 in., and their greatest height was 2 ft. 6 in. On both these outer walls at the entrance, small stones set on edge for marking out the lines of the wall were observed. Two are shown in pl. XXXIII, fig. 2, on the south horn, marked by pointers, and to the left of these are two upright stones which marked the point where the extra-revetment material terminated after being brought round the south horn. They have been undisturbed since the wall was built. At a point on the north side (marked on the plan, pl. XLII), on the line of the inner wall, a block of stone measuring 3 ft. long, 2 ft. wide, and 8 in. thick had been placed exactly in line with the centre of the cist within the central dome. There is a fine stretch of the inner wall, 2 ft. 6 in. high (with a batter of 6 to 8 in.) on the north side, in all probability that mentioned by Witts, who described it as 'fine dry walling which is well exposed', as in uncovering it an old excavation-trench was followed (pl. XXXIV, fig. 2). This is also true for the south side except that in this case it was the outer wall which was discovered, and which was followed as far as it exists, but here both walls are inconspicuous, and are discussed with the construction of the mound. The outer wall, where it exists at the north-east and south-east ends, follows the line of the small, sharply defined trench cut in the top of the clay (pl. XXXV, fig. 1). This has been taken as evidence of the existence of an outer wall; but it may not be so, and the outer walls may have extended only so far as the plan shows, finishing in the extra-revetment material outside the barrow as at Hetty Pegler's Tump. There the horns had a double wall, and a single revetment encircles the monument, which at the west end is intersected by others at right angles. Lamborough Banks or Ablington long barrow was surrounded by a double wall of masonry, each having a face.

The west ends of many barrows are inconclusive. In the barrows at Eyford and Nether Swell the walls could not be traced at the west ends,[1] and at St. Nicholas the wall on both sides was entirely lost at the west end, and the limits of the mound in this direction were obscure.[2]

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[1] *British Barrows*, 513–15.

[2] *Arch. Camb.*, 6th ser., xv (1915), 253.

At first sight Notgrove seems to be unsuitable for such a great construction, but it has the advantage of lying between the heads of four small streams. Long barrows were placed along trackways or at crossing-points as perhaps at Notgrove, the trackways being regulated by the geological formation. The limestone surfaces of the upland ridges provided dry and open country which was suitable for travel, while the valleys were crossed at points where the clay floor narrows or where the streams were fordable. Such trackways are usually to be found passing points where water could be obtained. The tentative sketch of possible trackways which follows is quite in harmony with the above principles, and while it is realized that roads and parish boundaries are modern, reasons for these boundaries may go back to ancient times. Where such roads are used as parish boundaries they are clearly older than the boundary. In late Neolithic times long barrows would be most conspicuous objects and serve as landmarks; it has always been the custom for man to build his great monuments where they can easily be seen.

Notgrove barrow is close to the trackway called Stanborough Lane, along which, west of the barrow, the parish boundary runs, and there is evidence that the trackway continued on to Belas Knap. Another boundary which goes north at right angles to Stanborough Lane exactly opposite the barrow joins, but does not follow, a footpath going down to Lower Harford. There is much evidence to show that this was formerly a trackway (see p. 158). Here there is a ford and opposite it is the main road to Swell. A parish boundary follows this road in a north-easterly direction from Harford for about a mile. The road carries on past the Swell barrows, Stow-on-the-Wold, Adlestrop[1] (where it is again used twice as a parish boundary), and the Rollright Stones, where there is also a parish boundary. It stops at the village of Great Rollright, where it meets another road going north. In a south-westerly direction from the site of Notgrove barrow there is now a road leading to Salperton and Hazelton long barrows. These are situated at the junction of three roads, and the road going due south has a parish boundary (fig. 4). These points were probably of sufficient importance to justify the erection of this important long barrow on a site which had the natural disadvantage of a dip both to the north and to the west.

The construction is adapted to the site, as the floor of the chamber is laid out on ground with a gentle slope to the west and with the ante-chamber at a lower level than the chambers. On the north conditions were more difficult. On this side the slope of the ground was levelled up with clay (pl. XXXVII, fig. 1), which may have a ritual significance, and should be compared with the ditch in which the large stones of Circle 2 at Bryn Celli Ddu are set.[1] An alternative theory is that the ditch was cut in order to prevent the clay from slipping by giving it a key, and this theory is supported by the fact that the trench on the south side was both narrower and shallower; on the north side a trench 1 ft. 6 in. wide and 9 in. deep was cut through the rock (the Lower Trigonia Grit). In this the clay was placed to a depth of 12 in., thus augmenting the general level, and it is in the top of this clay bed that the small V-shaped trench, 7 in. by 3 in. deep, which marked the line of the second or outer wall, was cut. This small trench extends along both sides of the barrow, the inner wall on the north being built 1 ft. within the bigger trench.

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[1] A barrow of uncertain form but containing a megalithic cist has recently been noted in this parish near the road.

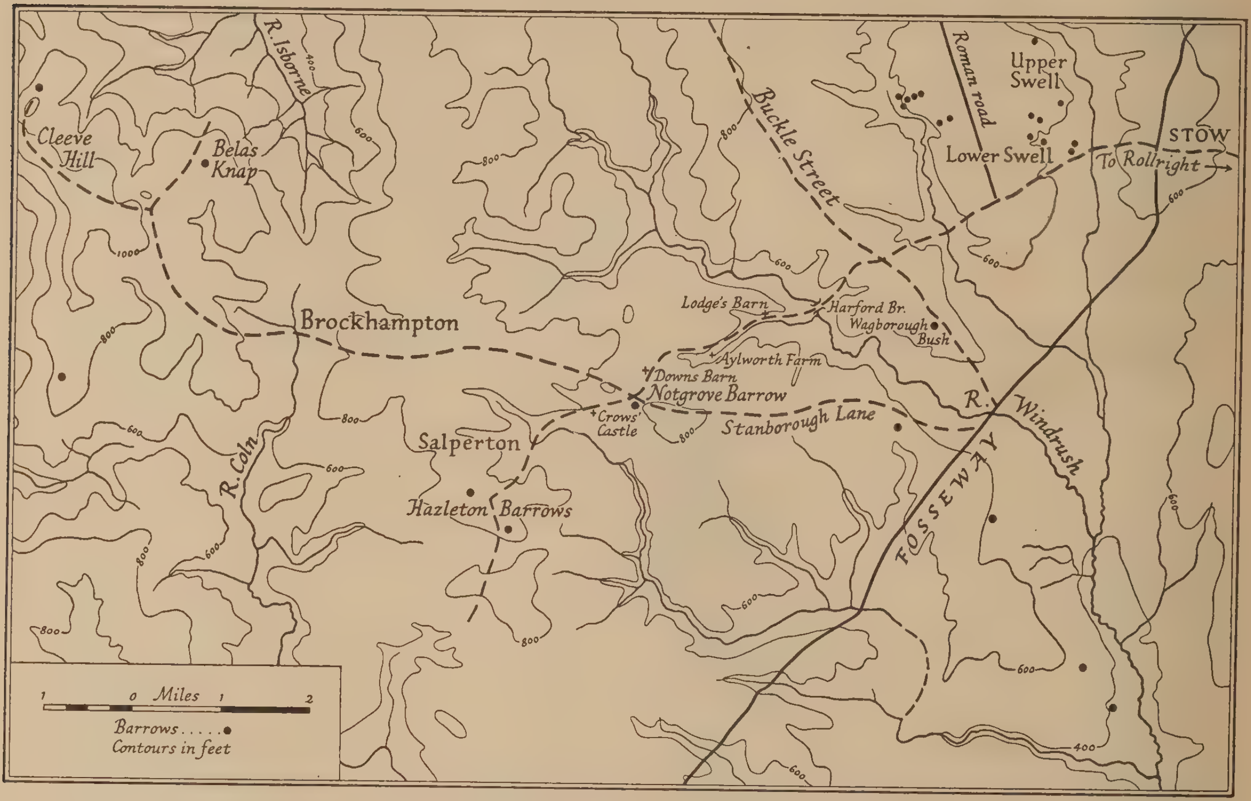
R. Isborne
400
600
Cleeve Hill
Belas Knap
800
1000
Buckle Street
Roman road
Upper Swell
Lower Swell
STOW
To Rollright
Brockhampton
Lodge's Barn
Harford Br.
Wagborough Bush
Aylworth Farm
Downs Barn
Notgrove Barrow
Crows' Castle
Stanborough Lane
R. Windrush
R. Coln
Salperton
Hazleton Barrows
FOSSEWAY
1 0 Miles 1 2
Barrows.....●
Contours in feet

Fig. 4. Map showing possible Neolithic trackways crossing at Notgrove long barrow

The construction of the body of the mound itself differs on the north and south. On the north the disadvantage of the slope had to be dealt with, and it was found necessary to build the inner wall 4 ft. 6 in. thick. This inner wall had no true face inside the mound; but at 4 ft. 6 in. from its outer edge the stone slates were built to slope in the opposite direction, that is, into the body of the

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[1] *Archaeologia*, lxxx, 200.

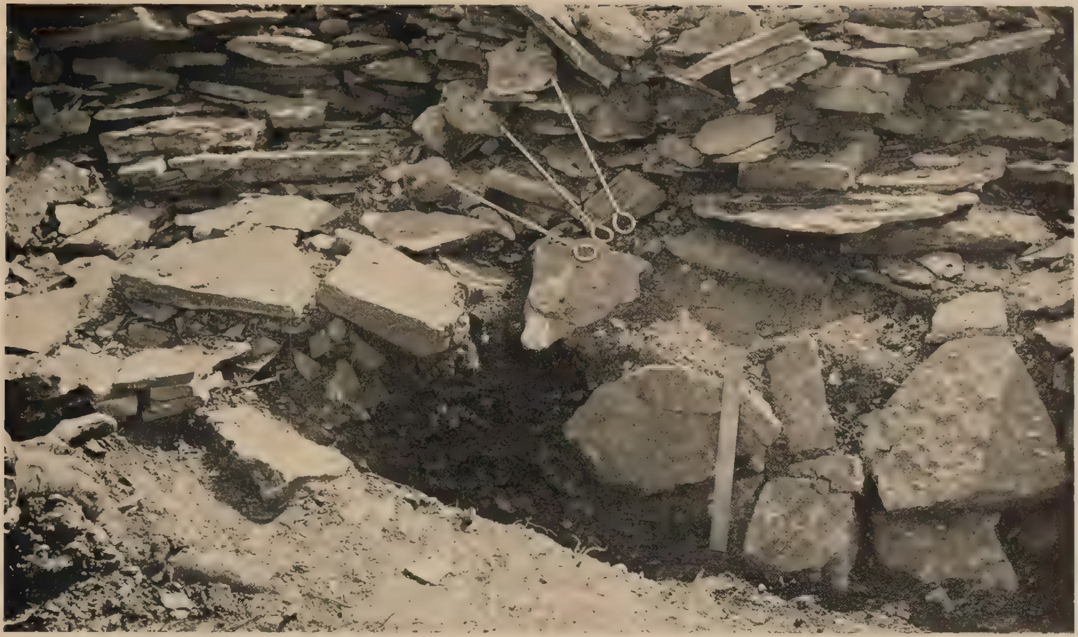

Fig. 1. Small stone blocks, marked by pointers, to raise angle of slope more quickly in original construction, south side of ante-chamber: also socket of orthostat S 3

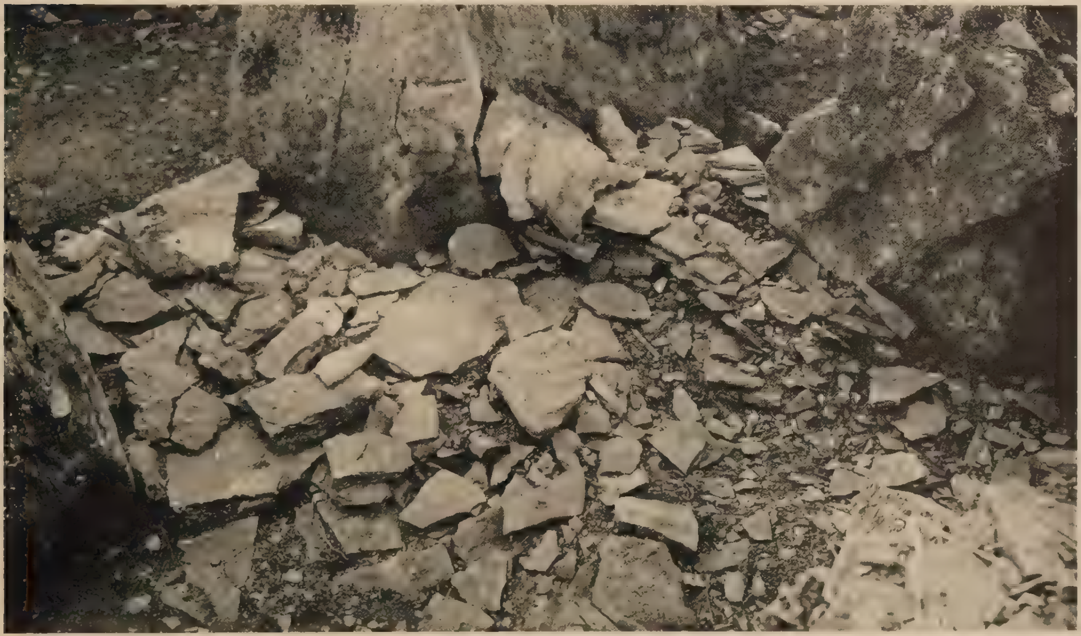

Fig. 2. Original construction on north side showing stones against back of orthostat N 3 with a finished edge; also back of dry-walling between orthostats N 5 and N 6 in Chamber D

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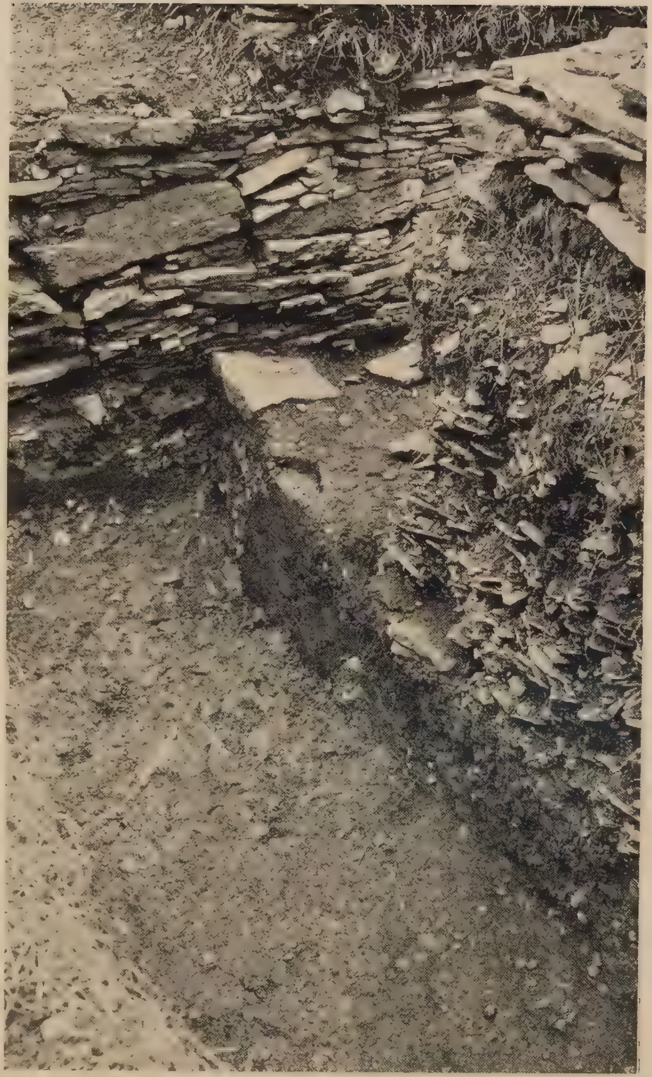

Fig. 1. Section XII, showing inner wall on north side, and depth of clay used to level up sill

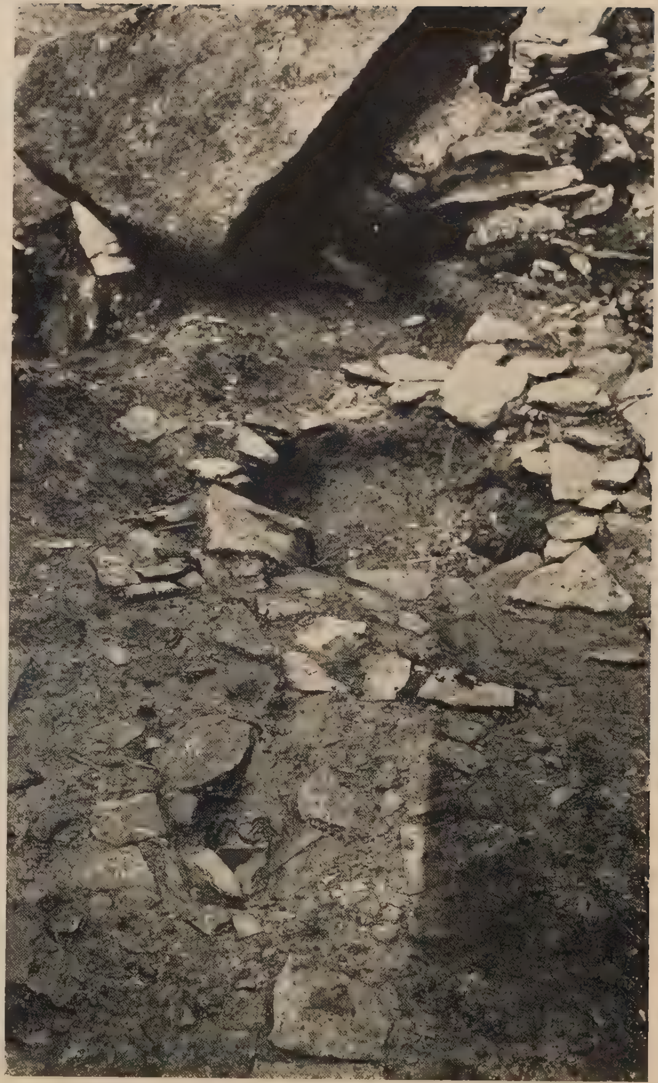

Fig. 2. Ring of circular depression at portal in which the unburnt skeletons of a young person and a child were found

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mound (section B–B) where on the lowest courses they reached the orthostats, and joined up with the original construction behind orthostat no. N 5. There is no evidence to show the height of this form of construction, but it is to be seen 2 ft. 7 in. high in pl. xxxv, fig. 2, on the south side in the forecourt, where the method of building can be observed. Pl. xxxv, fig. 2, also shows the inner edge of the inner south horn where the thrust came from two directions. There the builders placed one centre stone on edge in a perpendicular position and one on either side in slanting positions to take the thrust. Pl. xxxvi, fig. 1, shows small blocks of stone (Trigonia Grit) used to increase the angle of the slope more rapidly and to do so with less material. It is probable that the large blocks of stone to be observed in chamber B were the kind of material used for the upper part of the mound; similar material was used for this purpose at Belas Knap long barrow.

On the south side the construction is different. At the east end, at one point, the wall is 1 ft. 9 in. thick; on the south side it is nowhere more than one block wide and measures only 1 ft. where it terminates. The outer wall on this side, where it is observable, is also one block wide with a greatest width of 1 ft. 3 in. The body of the mound in this area has been completely removed except on its lowest courses, which show stones leaning against the orthostats as on the north side. Attention is drawn to the slight construction of these southern walls.

The Western or Tail End of the Barrow

The tail of the barrow has been extensively robbed and almost all construction outside the boundary wall has disappeared; the centre of the barrow at the west end has been robbed and the site itself has been quarried away. Outside the boundary wall two trenches proved the ground had been made up, and a local workman volunteered the statement that he had helped do the work.

The ground on the east side of the boundary wall has never been filled up and its builders built a bridge on which to place their wall. A very large stone was set in such a position that it prevented the others used from slipping, and the wall was built over them. The construction which remains is similar on both sides in section X and in section XIII.

The Forecourt

The forecourt is roughly paved with stone, and on the centre line in front of the portal there is an oblong depression (edged with stones) measuring 2 ft. 2 in. by 1 ft. 8 in., inside which there is a smaller circular hole on the north side. Over this area, unburnt human bones had been placed, which represented at least two individuals, a young person and a young child (pl. xxxvii, fig. 2).[1] A little to the south-east there was a small, oblong, stone-lined depression, measuring 10 in. by 9 in., in which was burnt black material. A little to the north-east there was another depression 7 in. by 9 in., less carefully lined and filled with burnt black material. Still farther east, but in the centre, there had been several fires. There were considerable traces of fire here, but no definite hearths flanking the entrance as at Bryn Celli Ddu, and the concentration of fire at every level was in the centre.

Extra-Revetment Material

Outside the revetment walls of Notgrove there is a quantity of material which calls for special notice. From the outer edge of this construction the covering of the mound sprang.[2] In the writer's opinion this extra-revetment material can only be explained as constructional, and of the primary period of the barrow; but on this point Mr. Radford and the writer are not in perfect agreement.[3] In the first place it is so close to the lowest courses of the revetment walls that it could not slip into this position from a high wall, and a very high wall must be postulated to account for the quantity of material under discussion. The next point is the closely packed nature of the construction (pls. xxxix, fig. 1, and xl, fig. 2). Fallen material falls at all angles, and in such cases spaces are to be observed where the stones merely touch and are not amalgamated in any way; whereas this material is carefully packed and in every case retains the distinctive brown colour which was to be observed in every instance where the original barrow was discovered. If this material slid into this position it would necessarily take with it evidence of weather action, and whatever other forces were responsible for its removal from the barrow; but nothing of the kind was discovered at any point. The third point is the nature of the material. This is altogether made of larger, coarser stone than that used in the walls. The fourth point is its design. At the east end it follows the curve of the horned entrance and after turning the south-east corner spreads out to form the construction from which the covering of the mound sprang. On the north side, however, it could not be treated in this way—support was necessary on this sloping site for the revetment wall, and some method had to be devised to prevent the covering material from rolling farther down the hill. This accounts for the constructional material, to be seen in section XIII (pl. xl, fig. 2). Support is given by the mass of material, while the covering would be retained by the continuous row of stones inclined at an angle sloping in towards the body of the mound, which would be difficult to explain in any other way. Exactly the same features are to be seen in pl. XXXVIII, fig. 1, and in section X at the tail, where a continuous row of stones at an angle demonstrates the curve of the barrow at this point. Pl. XXXVIII, fig. 2, shows the lower courses of this supporting material at section XII, where they are bedded into the clay intentionally, and where clay was used as a mortar. On the south side at the east end this material swept round in a curve to join the wall of the outer horn. The builders' stones to mark where this construction came are still in position and are to be seen in pl. XXXIII, fig. 2. From this point southwards the outer wall is enveloped in this extra-revetment material, which is not so massive as that cut through on the north horn. There so much material had to be cut away and the wall was so obscure that at one point it was abandoned. When it was discovered that there was a second wall, its excavation was begun again and later it was found to be the outer one. The extra-revetment material on the north side at the east end (with the exception of that cut through to trace the wall) can await investigation by another generation. Measurements taken from the inner wall at the north-east corner and at the south-east corner to the outer edge of this extra-revetment material, are 11 ft. in one case, and 11 ft. 1 in. in the other, a difference of only 1 in., although there is a sharp natural fall to the site on the north side. These points are 52 ft. apart and the outer edge of the extra-revetment material at each corner has a definite curve, which conforms to the general curve of the barrow at these points, and at regular intervals stones are placed on edge in such a way that they prevent others from slipping. Then as to quantity: the material stretches for 11 ft. from the inner wall at the east end, 22 to 23 ft. on the south at section II, and on the north side, at section XIII, it is 16 ft. from the same point. At the tail end at section X the barrow would appear to be at its original height, but the extra-revetment material there measured 16 ft. outside the line of the inner wall. It is as strongly built at the west end as at the east. Although it had less mound to support this was necessary, because the ground falls rapidly away to the north and to the west. At the east end the barrow would have to be a very considerable height to allow such quantities of material to have slid from its wall and its covering.

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[1] At Bryn Celli Ddu burnt bones were found in a similar position.

[2] Thanks are due to Mr. C. W. Phillips for this explanation.

[3] Mr. Radford's views are to be found on p. 154.

The present height of untouched barrows must be considered in this connexion, and for the purposes of comparison a survey has been made of Sherborne Lodge Park barrow, which Crawford described as the finest long barrow he had ever seen. West Tump, in Cranham Wood, has been surveyed for the same purpose, and their heights would not allow one to postulate the quantity of extra-revetment material found at Notgrove. Again, the height necessary to produce this material would be impossible on the 54 ft. between the walls, and the character of the wall on the south side in particular does not speak of a vast erection. It is little more than a line of demarcation, and Mr. Thomas Overbury considers the walls could not have carried the material necessary to cover the barrow.[1] Witts says this barrow is 78 ft. wide, and this must necessarily include the area on the south side, which the writer contends, where it is undisturbed, is the original covering of the barrow. On the slide theory the barrow is only 54 ft. wide, but the present writer's plan shows it is 80 ft., a difference of 2 ft. only from Witts's Survey. The blocking of the entrance must also be considered in deciding the question of the extra-revetment material.

The Covering of the Mound

In this area, where stone is plentiful, the covering would be largely of stone. It is possible to see, in each of the six sections cut through this covering on the south side, the exact point where it was broken through, from the top, for the purposes of robbery. The upper layer of gravel (which is merely disintegrated stone) demonstrates this point very clearly. It was also possible to see at a lower level the gravel which fell at the time of the destruction.

The Blocking of the Entrance

This has to be considered in relation to the extra-revetment material against which this blocking was built.

(1) *Material used for this purpose.* This is different material from that used in any other part of the barrow. It is from the upper beds of the Stonesfield slate series, and is of a less compact, more shelly material than that used in the barrow itself or the extra-revetment.

(2) *The angle at which the stones are placed.* These stones in the lower courses are definitely horizontal, loosely placed with large voids, and there is very little tilt for a height of 3 ft., after which there is a slight tilt in order to reach its highest observable point, which is just outside the entrance, and there it is 3 ft. 3 in. high.

(3) *The distance from the entrance.* This blocking extends for 31 ft. from the outer wall of the north horn, the bottom courses of which are horizontal.

(4) *The objects found on the floor of the forecourt and the objects found in the blocking material.* It has already been noted that immediately in front of the

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[1] Mr. Overbury wrote as follows: 'I visited the barrow twice during the progress of the excavations, on one occasion taking my experienced Cotswold clerk of works. Together we carefully examined the retaining walls and came to the conclusion that certainly the thinner ones—2 ft. and less in thickness—could alone never have supported the weight of the covering. Further, the external face of these walls when freshly revealed showed no signs of ever having been exposed to the weather. We also observed that clay existed in the joints of the masonry—which Mrs. Clifford describes as extra-revetment material—giving the appearance of mortar.'

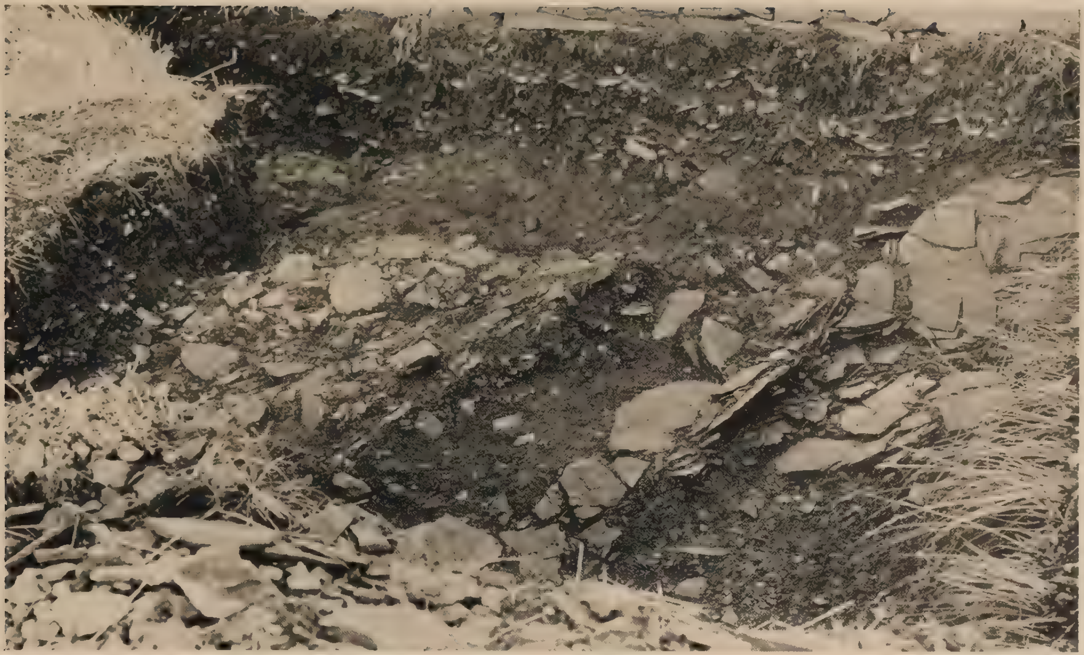

Fig. 1. Section XIII, on north side, showing arrangement of stones on upper surface of the extra-revetment material

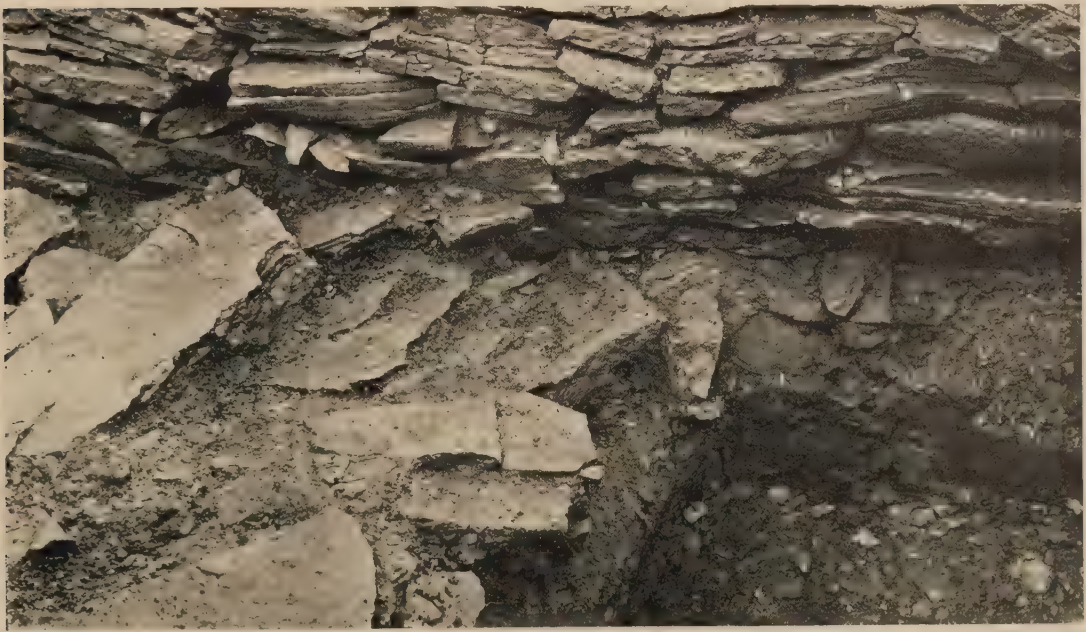

Fig. 2. Section XII, on north side, showing wall and the lower courses of the extra-revetment material laid in clay, with clay used as mortar

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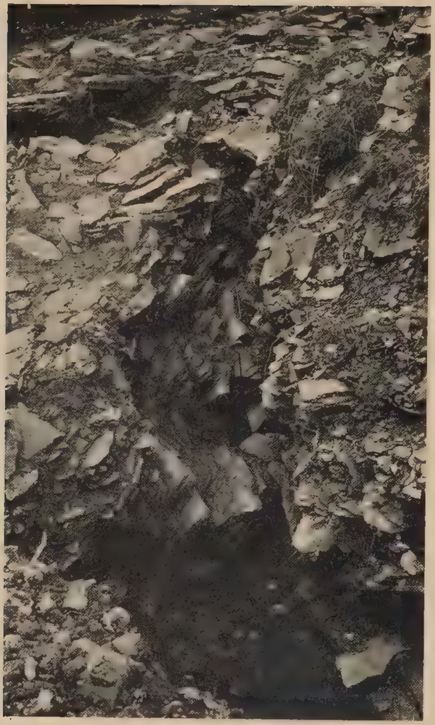

Fig. 1. Extra-revetment material at south horn, showing character and closely packed nature of stones used

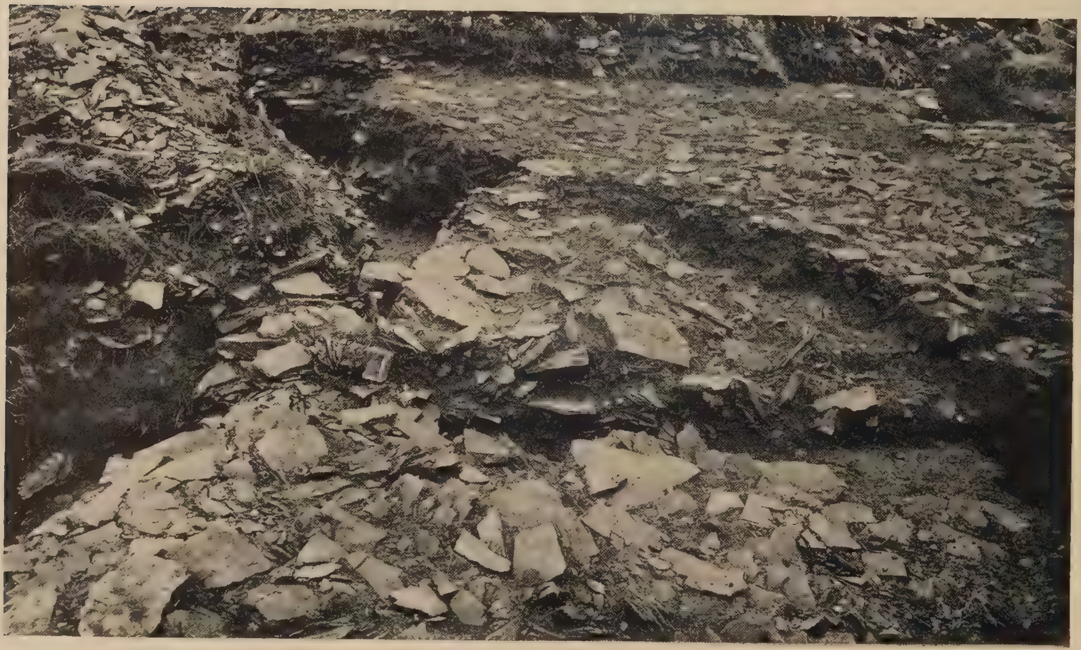

Fig. 2. The relation of the extra-revetment (lower) material to the blocking of the entrance (upper) at the south end

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entrance was an oblong depression on which there were human bones representing at least two persons; and at a distance of 10 ft. from the entrance many bones of a pig were found, while at 11 ft. 6 in. further bones of ox and horse had been placed. These bones would have been eaten by wild animals if the barrow had not been closed immediately. On the floor there were indications of fire at 8 ft., 13 ft., and 14 ft. 6 in., from the outer wall of the north horn; and it must be remembered that only a small portion of this blocking has been removed. The whole of the north half is intact, and many of the features described could be seen in section. Several fires were made during the placing of the blocking material; at a distance of 6 ft. 7 in. from the ground a fire stretched for 5 ft. across the forecourt. Pottery which represents the lower part of a Neolithic B bowl was found on the same level; there is no rim, but fragments of a rounded base are clearly distinguishable, and it has a decoration of herring-bone incisions. A little to the east were found the tooth of a horse and bones of an ox, while no fewer than 17 flint flakes were recovered from this area. There were also a smooth quartzite pebble stained brown, an oyster-shell, and half of a bone ring, a piece of a horse's tooth polished for use as a gouge (fig. 5), and near by a bone of a hare which had been rubbed down and bevelled for use. Close to the outer wall of the south horn a bone, which was also bevelled and rubbed down for use, was found. All through this material fragments of pottery of Neolithic A and B, bones, and teeth have been discovered. Part of a bead of Kimmeridge Shale came from the area above a fire at 14 ft. 6 in. from the north door-jamb.

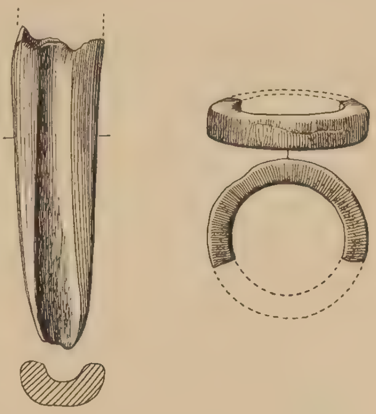

Fig. 5. Piece of a horse's tooth polished for use as a gouge and broken bone ring ($\frac{1}{1}$)

(5) *How the blocking material was finished off on its upper surface.* When the blocking material was at the required height, the last layer formed a level paving (see pl. XXXIX, fig. 2), and at 31 ft. from the north horn imperceptibly joined the land outside the barrow, this being the feature which has hidden the entrance for some four thousand years. On this paving a fire was made in a circular depression, and two depressions similar to those in the forecourt were observed, both being filled with black material. At another point burnt bones were discovered. In this rough paving there were some stones with straight edges, and Dr. Bersu thought a grave could be distinguished, but excavation produced only sherds of Neolithic B pottery. Close to this point the sherds of Neolithic B, decorated with impressions made with the articular end of a bird-bone, were found (fig. 7, no. 9).

(6) *What other barrows can tell us.* At Belas Knap long barrow the extra-revetment material was believed to be slide from the walls and roof of the barrow, and the same conclusion was reached at St. Nicholas long barrow. On the other hand, the cairns of Bryn Celli Ddu and Capel Garmon are believed by Mr. Hemp to have been blocked. The principle of support or protection for the dry-walling of the 'dome' has to be admitted for Notgrove, as pl. XXXI, fig. 2, shows; and, once admitted, it has other possibilities. It has been argued that the position of this material offers no support to the walls against which it has been found. If this is so, it is strange that Mr. John Ward, writing of St. Nicholas barrow,[1] should say, 'the rest [revetment wall] has been carefully covered up, but in such manner that its line, as well as the form of the mound is apparent at a glance. The face, as already stated, was generally leaning forward, and the removal of talus of debris in front left it unsupported. To provide the necessary support large stones were piled against it to form a steep embankment'.

The view that Notgrove was definitely closed is strengthened by Greenwell's account of the opening of Pole's Wood South (Upper Swell) barrow (his no. 231, *British Barrows*, p. 52). He says: 'The wall or facing has been made of thin oolitic slates very carefully arranged; this being especially noticeable at the east end in the concavity within the "horns", where it has been most beautifully constructed, and had a very imposing appearance when it was first exposed to view. This is the more remarkable as it is evident that it was not intended to be seen after it was made, for it had been encased by a backing of fine small stones for a thickness of 2 ft., and beyond that by larger stones, the whole intentionally arranged, and not caused by the disintegration of the mound itself. Before the barrow was opened, the east end presented an ordinary rounded form, there being no indication of the enclosing wall with its "horns". It is not possible to decide positively whether the wall also on the sides of the barrow had been at first encased as found, or whether the outlying material at that part had merely accumulated by the falling down of the mound. On the whole, I think it more probable that there was originally a casing to the wall, for otherwise the frost of even two or three winters would have broken it up more than it was found to be when uncovered.'

(7) *How the material is affected by exposure.* Greenwell's last point is an important one. All who have lived in Cotswold know that the upkeep of dry stone-walling, to counteract the effect of frost action even when made of blocks of stone, is considerable, but carefully picked stones, such as were used in Neolithic work, would be more liable to decay. Evidence of this is seen wherever such walling has been left exposed after excavation, and there are many sites

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[1] *Arch. Camb.*, 6th ser., xv (1915), 318.

which have completely lost their value and their interest through exposure. In 1881 the fine dry-walling of the central passage at Notgrove was especially noted. Now there only remain the lowest courses between stones 16 and 15 N, and that because that part of the central passage was filled to a greater depth with debris than elsewhere. Compare this with the dry-walling of the dome which was never exposed until 1934, and the fresh, clean-cut look of the outer wall of the north horn in particular, which would not have been preserved if it had been exposed to the weather. Again, the dry-walling which remains in the chambers at Notgrove was protected from frost by debris. All who inspected the monument prior to 1934 believed, with the writer, that it had entirely disappeared.

(8) *The local point of view about dry-walling.* In discussing the closing of barrows, too much stress must not be placed upon the view that walls were built to be seen. Stone walls were not all important, because in the east of England long barrows were built without them, but in the Cotswolds stone is the easiest and most convenient form of construction. The men employed on the excavations at Notgrove long barrow built little walls on almost every section in order to keep the material out of the trenches, and the writer feels that walls were not necessarily built to be seen. When building in stone, it was the easiest way to give the barrow shape.

(9) *Further tests for a time-space between the building of the revetment-wall and the placing of the extra-revetment material.* Dr. Bersu, Mr. Radford, and the writer cut three test sections in the clay, which everywhere lies outside the walls, to see if anywhere on the clay could be observed any deposit which would indicate an interval between the building of the walls and the addition of the revetment material, as in the absence of binding vegetation this would quickly accumulate. In no case could the slightest sign of such a deposit be observed, which is strong evidence for the material being constructional, and of the primary period of the barrow.

Burning. Burning played a great part in the ritual of Notgrove. The points where fires had been placed were observed owing to the red colour of the stone. In other places the ground was burnt to a red colour, and in the majority of cases charcoal was found, but often not large enough for determination. The following trees have been detected by examination of such material: ash, plum or cherry, hazel, and elm.

Fire was observed at the following points:

South door-jamb.
In construction in forecourt, south side.
In construction between chambers A and B.
In construction between chambers C and D.

In construction between chamber D and forecourt, north side.
In chamber E.
In chamber A, extending into passage.
In passage, circle paved.
In section II it extended right beyond the 3-ft. cutting.
In section III the lowest courses of this construction were considerably burnt.
In section VII, extreme east end, considerable fire on clay-level.
In section X, in construction—stones burnt red.
In forecourt at 6 ft. 7 in., 8 ft., 13 ft., and 14 ft. 6 in. (all measurements from outer wall of north horn).
On top of closing of forecourt.
In circle, and burnt bones in centre on this level 6 ft. from north horn door-jamb.[1]

Human Remains

There is strong evidence in the Cotswold area that long barrows were used as ossuaries. Greenwell, who investigated several barrows in the Cotswolds, says: 'And from the way in which these bones, which I removed myself, were arranged, it was clear to me that though they had been taken up and replaced without any knowledge of the anatomical relation of, at least, the long bones, a good deal of care and painstaking had been bestowed upon their re-arrangement. The skulls lay apart from the lower jaws and were in relation to other bones which they do not normally touch, and in many cases the long bones had their proximal and distal ends occupying the reverse of their natural allocation. But mal-arranged as they were, it was plain that they had been deliberately taken up and as deliberately laid down again in the positions in which we found them.'[2]

In Hetty Pegler's Tump there were the remains of twenty-eight skeletons, and in Belas Knap thirty-six, while at Pole's Wood South a chamber measuring only 7 ft. by 4 ft. could not have accommodated the nine skeletons discovered had they been placed there with the soft parts of the body in position.

Considering the ruined condition of Notgrove a large number of human remains has been found, but their fragmentary condition makes it very difficult to say how many people are represented. To give an idea of quantity, 54 teeth and 159 bones have been found which were capable of identification, while a much larger number were mere splinters which it was impossible to determine. The state of preservation of the bones agrees with those from Belas Knap and other long barrows to be seen in the Cheltenham Museum. The Notgrove bones have been kindly examined by Dr. A. J. E. Cave, Assistant Conservator of the Royal College of Surgeons, who has been able to identify with certainty only

[1] Fire is recorded in the following long barrows: Belas Knap, Rodmarton, Bisley, and Nympsfield.

[2] *British Barrows*, 530.

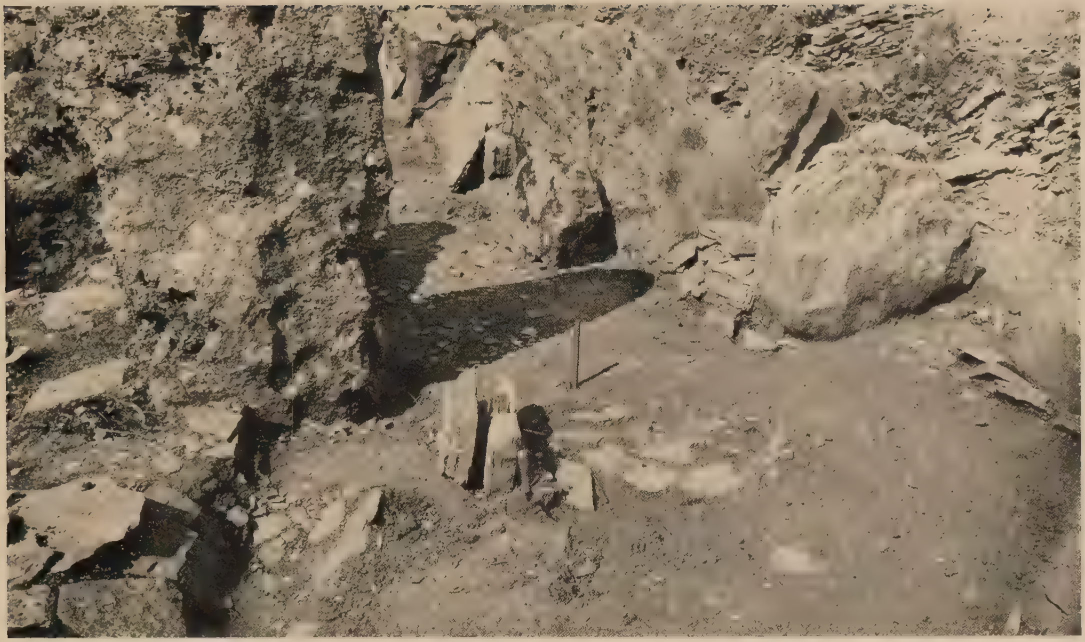

Fig. 1. Remains of bench and burnt patch in ante-chamber

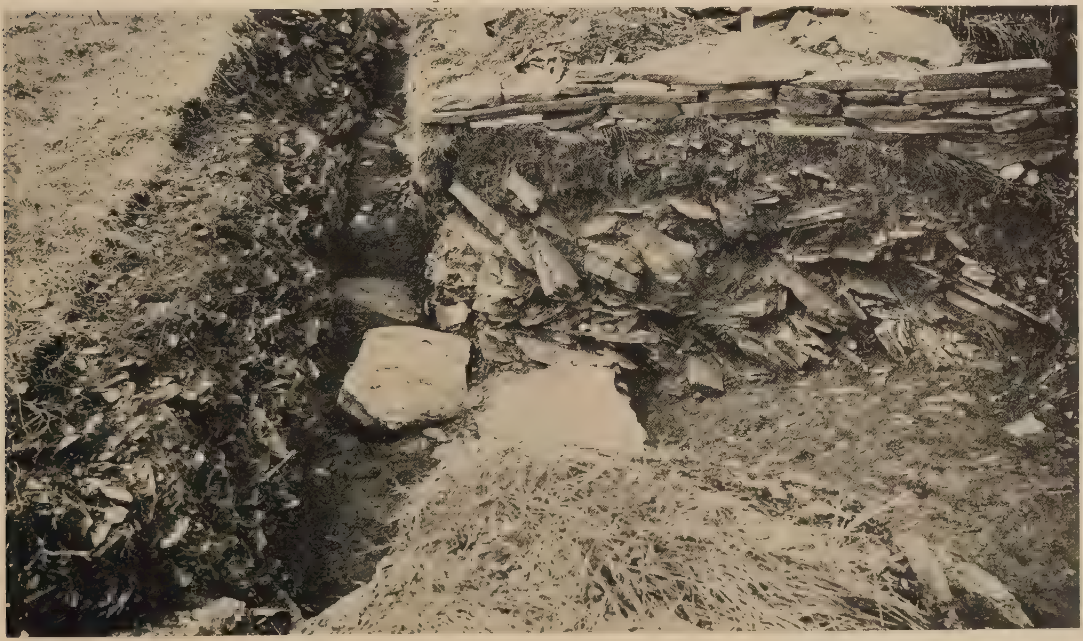

Fig. 2. Extra-revetment material in section XIII, north side

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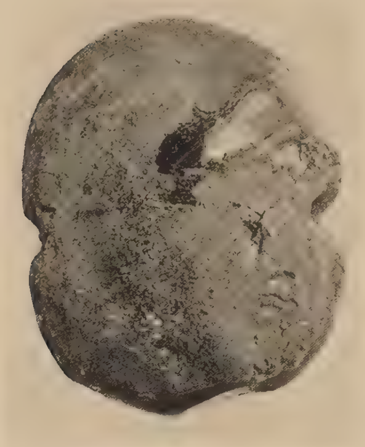

Fig. 1. Amber bead from Vester Svebel, Skads, Jutland, Copenhagen Museum ($\frac{1}{1}$)
(By courtesy of the Director)

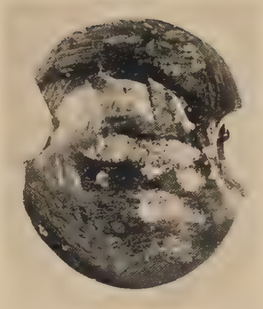

Fig. 2. Amber bead from Bodarp, Skåne, in Stockholm Museum ($\frac{1}{1}$)

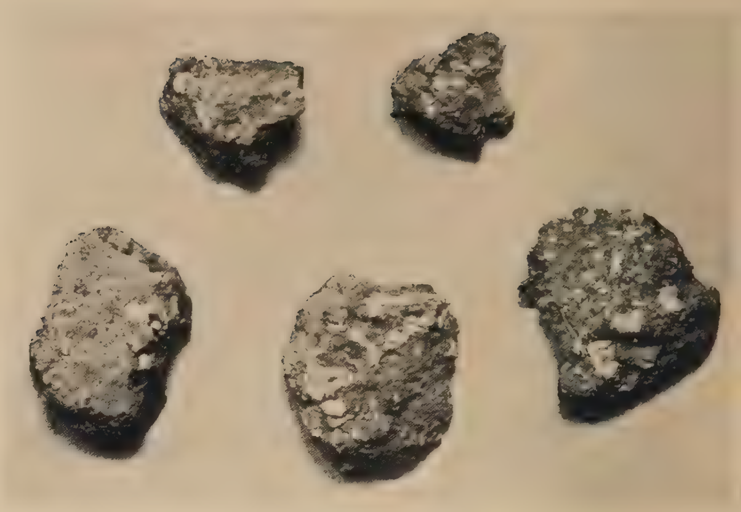

Fig. 3. Neolithic A pottery from chamber D (slightly over $\frac{1}{1}$)

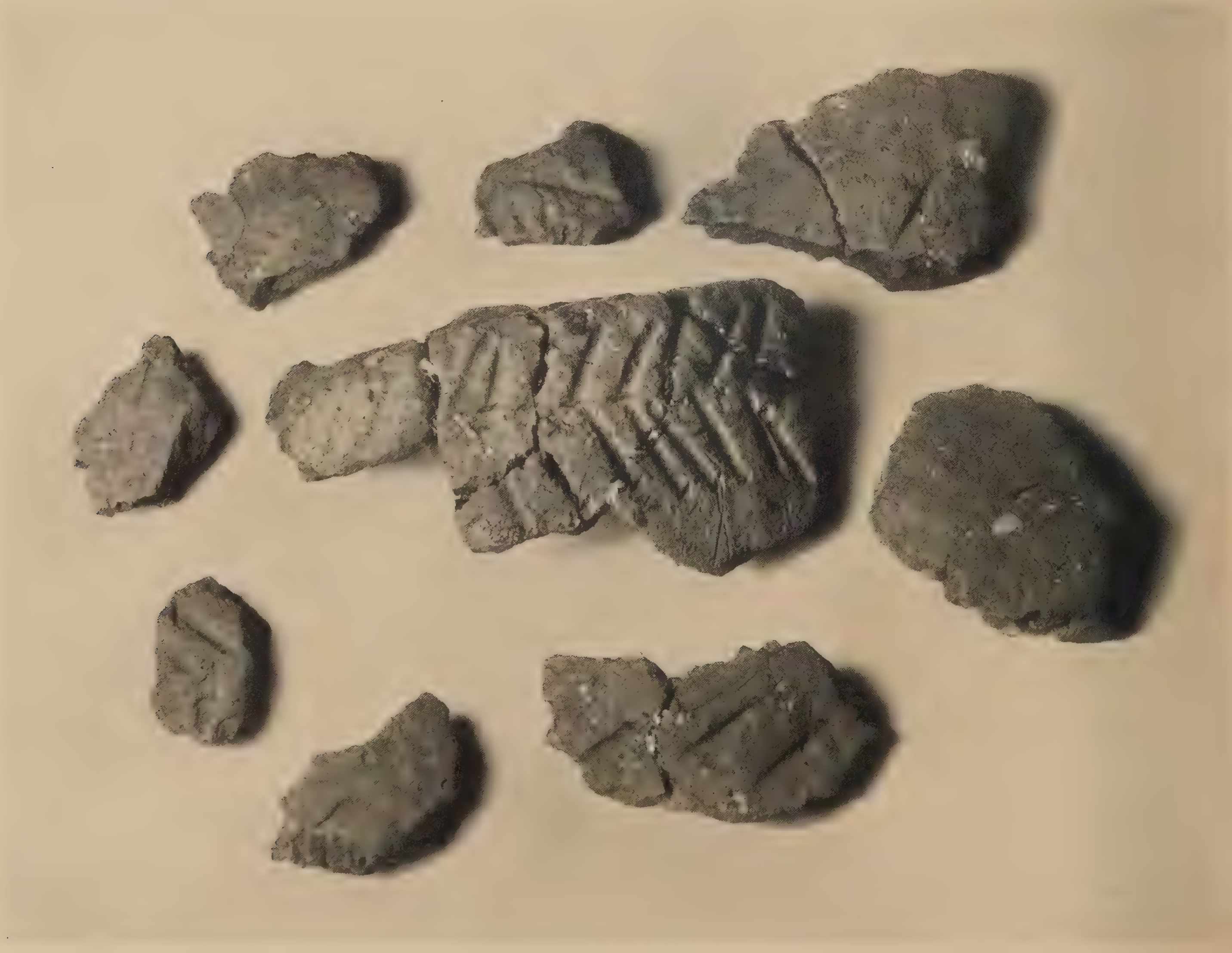

Fig. 4. Neolithic B pottery from Blocking ($\frac{1}{1}$)

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nine individuals. Farther than this it is impossible to go. The most important group of bones is that from the cist in the dome, which should be those of the great chief, in whose honour the structure was made, the bones in the chambers of the barrow being those of people entitled to burial near him, they having been buried elsewhere until his death, or perhaps the ceremonies at that time necessitated the sacrifice of those whose bodies were placed in the barrow. Another interpretation of the burials would be that the bones in the cist belonged to a ritual burial made at the building of the barrow, and that the other bones in the chambers represent interments while the barrow was in use.

The bones in the cist are obviously large and robust, and in all probability are those of an adult male subject between 50 and 60 years of age. Fourteen bones could be labelled, while there are twelve teeth.

The next important group is that found in an oblong depression surrounded by stones in the forecourt immediately in front of the portal. On analogy these may be considered in the light of a sacrifice. At least two persons are represented, a young person and a young child. The bones include a right temporal of the former (mastoid process very tiny and infantile in type). Twenty-eight were sufficiently preserved to be identified. On the top of the central dome were the remains of a girl of 18 or 19 years of age, twenty-six bones being capable of identification.

In chamber A were found the bones of a very young infant (or foetus near term), two children of about 12–14 years of age, and a young female 16–20 years old. Thirty bones could be identified here, and there were eight teeth.

In chamber B were bones of a child, including a piece of its cranial vault, some bones of adults, and one tooth.

In chamber C were twenty bones of adults sufficiently preserved to be determined.

ANALYSIS OF BONES AND TEETH

Bones capable of identification :		*Teeth :*	
Cist inside dome	14	Cist	12
Top of dome	26	Chamber A	8
Chamber A	30	Chamber B	1
Chamber B	8	Chamber D	5
Chamber C	20	Forecourt	1
Chamber D	16	Passage	19
Passage	1	Depression in front of entrance	1
Forecourt	2	Old excavations	7
Depression in front of entrance	28		54
From old excavations	14		
	159		

In chamber D sixteen bones were identified, including those of an aged male who suffered from osteo-arthritis. There were five teeth.

In the forecourt were two human bones and one tooth which could be identified, and from the central passage one bone, nineteen teeth, and no less than fourteen bones and seven teeth from the throw-out and disturbed material of previous excavations. The analysis is given on p. 143.

The writer is convinced that the material between the two horns is in the nature of a deliberate blocking. It is impossible, however, to be certain whether this blocking consists of (*a*) an original deposit placed there at the time of, or soon after, its erection; or (*b*) whether it represents the last blocking put there after a series of successive burials. The nature of the burial-rites enacted at the Notgrove long barrow can be differently assessed according to which of the two above interpretations of the blocking material is accepted. If the first interpretation be accepted then to explain the quantity of bones we must adopt one of two theories: (*a*) that the persons of all ages discovered at Notgrove long barrow were buried elsewhere until the completion of the monument; or (*b*) that there was a slaughtering at the death of the chief. If the second interpretation be accepted, then Notgrove represents a collective burial-vault, used over a long period. After each interment (or series of interments) the barrow would be ceremonially blocked and thus kept closed until there was need for it to be re-opened. The bones of the girl from 17 to 19 years of age on the dome are suggestive when their nearness to the small block of stone, which may have been an object of adoration to Neolithic man, is considered; and bones which may perhaps be a sacrifice at the portal, of at least two persons—a young person and a young child—should be especially noted. One bone was discovered with evidence of chopping, but it cannot be stated that the bone is human. A part of a right radius from chamber C, however, has two marks on it, which may well be the result of blows when the bone was broken. This fragment is only 1¾ in. long, while there are many pieces of other radius bones only 1 in. long, and these could not be in this fragmentary condition without deliberate breaking. This point has, however, been raised before.[1] The large number of teeth in the passage is curious when so few other bones were found there, and the total absence of any human bones in the ante-chamber should be noted. The crowns of the teeth often showed great attrition but no disease.

It has already been mentioned that among these human remains there are one or two isolated foetal and infantile fragments present. Similar remains have been published from Pen-y-Wyrlod,[2] Pant-y-Saer,[3] and other Neolithic sites, while Witts, who excavated West Tump,[4] considered that barrow was raised in honour of a young female and her baby, whose bones were discovered on five flat stones arranged in the shape of a semicircle. There were upwards of twenty skeletons found in the passage which led to this point.

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[1] Crawford, *L.B.C.*, 14.

[2] *Arch. Camb.*, lxxvi (1921), 296.

[3] *Arch. Camb.*, lxxxviii (1933), 185.

[4] Crawford, *L.B.C.*, 137.

ANIMAL REMAINS FROM NOTGROVE

Animal remains include ox and calf, deer, pig, rabbit, rat, horse, boar's tusk, wolf or dog, common fox, weasel, bank-vole, short-tailed field-vole, water-vole, long-tailed field-mouse, mole, sheep or goat. Burrowing would account for rabbit. Animal remains were found in the following places:

In construction of ante-chamber, south side: Humerus, ribs, and phalanx of pig.
Passage: Calf, mole, bank-vole, pig, sheep or goat, small ox, horse, frog or toad.
Chamber B: Calf.
Dome: Ox, dog or wolf, rabbit, short-tailed field-vole, water-vole, pig, frog or toad.
South Wall: Ox.
Ante-chamber: Hare, sheep or goat, rabbit.
North horn: Toe-bone of dog and ulna of pig, sheep.
Chamber A: Large ungulate.
Throw-out: Sheep and pig.
Blocking material: Pig (about twenty bones), common fox, small ox.
Forecourt: Pig, bank-vole, long-tailed field-mouse, sheep or goat, horse.
Covering of the mound: Weasel,[1] short-tailed field-vole.
End of tail, outside wall: Rabbit.

FLINT

Altogether forty-nine flint flakes were found, but could not be considered first-class artifacts. Flint does not occur naturally on the Cotswolds, the nearest supply being the Downs of Berkshire and Wiltshire. The leaf-shaped arrowhead discovered in 1881 is illustrated in fig. 6.

Chamber B	4	Covering mound	1
Chamber D	2	North horn	1
Passage	3	Wall—south side	3
Tail	5	Blocking entrance	20
Cist	2	Surface	2
Dome	5	Section VIII	1
			49

OTHER FINDS

Bone skewers (fig. 3).

Bone bead, of the same type as the one of Kimmeridge Shale (fig. 6), inasmuch as the hole is widely bored. It is described by Mr. H. Beck as an 'elliptical oblate bead'.

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[1] Weasel was found at Nether Swell (*British Barrows*, 514).

Gouge made from tooth of horse (fig. 5).

Bone ring.

Bone tool.

Bored stone (fig. 3). This was submitted to Mr. L. Richardson for a geological opinion; he says: 'It is made from Guiting stone and the convex side of the stone suggests artificial abrasion. Its red colour is due to the action of fire. Parts of the beds in the Guiting stone are bored by annelids. This hole is certainly very straight and may have received some artificial treatment.' It is difficult, however, to know what it could have been used for, but it may be incomplete.

Pebbles. One of quartz from the forecourt, stained brown, and one of quartzite from section X.

One pebble, white, of quartz from the passage.

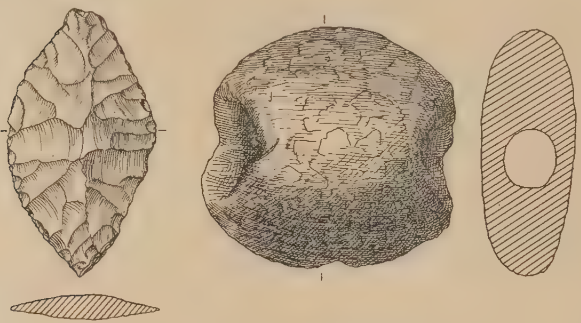

Fig. 6. Leaf-shaped arrow-head and Kimmeridge Shale bead ($\frac{1}{1}$)

On the top of the dome a stone object, which resembles a bent human figure, was found. This was also submitted to Mr. L. Richardson, who says: 'I have examined your specimen. It is of local rock—inferior oolite—but without breaking a part I cannot obtain a fresh surface to enable me to say to which sub-division it belongs. There are characters which suggest Clypeus Grit. The form of the specimen certainly suggests an "idol", but I am inclined to the opinion that the resemblance is accidental and due to the natural weathering of an unequally hardened and irregular piece of rag stone. Prehistoric man may have noticed the resemblance to a bent human figure, and therefore prized it.' Mr. Reginald Smith is of the opinion that it has not been artificially shaped.

DATING

From the undisturbed body of the mound or the underlying clay are recorded no finds which would have been contemporary with or earlier than the monument. Finds from the chambers, and therefore dating from the period when the barrow was in use, include a leaf-shaped arrow-head, a bead of Kimmeridge shale (fig. 6),[1] and pottery sherds of Neolithic A and of beaker types. The latter come from the ante-chamber.[2] The arrow-head is a normal long-barrow type. The bead has been claimed as a Bronze Age type, but the nearest parallel comes from the long barrow at Eyford,[3] where there is little doubt that it was placed in the

[1] Kimmeridge shale could be obtained in Wiltshire.

[2] There are fourteen sites in the Cotswold area with beaker evidence, and six of these are long barrows.

[3] *Proc. Congress Prehistoric Sci.*, 1st session (1932), 144; *Proc. Prehistoric Soc.*, 1935, 122.

chamber while the monument was in use. Similar beads in amber, a degeneration of the double-axe type, are common in the period of the Scandinavian passage graves (pl. XLI, figs. 1 and 2). An imitation of this Scandinavian form in Kimmeridge shale $\frac{5}{8}$ in. long has been found in a round barrow at Normanton, Wiltshire,[1] associated with a cinerary urn of overhanging-rim type and a grape-cup.[2] This probably represents a survival, as the beads in Scandinavia belong to an earlier period parallel with that of our long barrows.[3] A more elaborate bead in shale has been found in sealed deposits in Yorkshire long barrows, e.g. Helperthorpe (Mortimer, *Forty Years' Researches*, 333). The type may therefore be claimed as Neolithic A in origin, while possibly surviving into the Bronze Age. The pottery is too fragmentary to afford a close date. Piggott draws attention to one rim from the ante-chamber (fig. 7, 1), which he compares with rims from Abingdon. On this basis he suggests an A 2 date. But the absence of ornament points towards A 1. A 2 wares are not known in the Cotswolds, and the ante-chamber is contaminated by beaker sherds, which are in any case as late or later than the A 2 wares. While it is unwise to lay too much stress on any of these factors it may be concluded that the evidence proves a Neolithic A date, and that it does not demand a date late in that period.

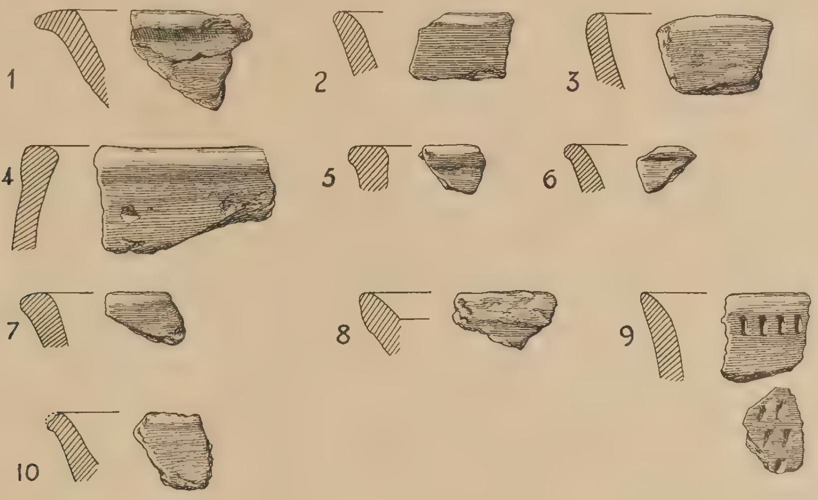

Fig. 7. Pottery rims ($\frac{1}{4}$)

Neolithic B pottery was found in the blocking, suggesting a later date for the last blocking of the barrow (pl. XLI, fig. 4). It would appear that B is later than A in the Cotswolds, inasmuch as B was secondary at Pole's Wood South, where a bowl of this ware was buried in the north horn at the east end and not much beneath the surface of the mound.[1] Neolithic A has been found in Eyford, West Tump, Notgrove, and Rodmarton long barrows, but at Cow Common long barrow it would appear to be secondary, as pottery spoons, which belong to this family, were found not much below the surface.[2]

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[1] *Cat. Devizes Museum*, fig. 145.

[2] *Abercromby B.A.P.*, ii. 61. Colt Hoare's *Ancient Wiltshire*, i, p. 202.

[3] Thanks are due to Miss Eleanor Hardy for photograph and help in this connexion.

The use of bone for implements extends beyond this period, but its use at this time is sufficiently demonstrated by its discovery in five long barrows in the Cotswolds. Bone skewers are quite common in Sweden in the Megalithic period.

TYPOLOGY

The plan of the chamber of Notgrove long barrow has been aptly described as 'double-cruciform'. It consists essentially of a long gallery, with two pairs of side-chambers. This transeptal or bilateral elaboration of the passage is common among the chambered barrows of southern Britain. Wayland's Smithy[3] in Berkshire, and probably Penmaen Burrows[4] in the Gower peninsula, represent galleries with one pair of lateral chambers; while Stony Littleton[5] and Nempnett Thrubwell,[6] both in Somerset, have each three pairs of side-chambers. There are three other chambered barrows in England and Wales with two pairs of side-chambers. Two of these—Hetty Pegler's Tump[7] and Nympsfield[8]—are also in Gloucestershire, while the third—Parc Cwm[9]—is at Parc le Breos in Gower. Parc Cwm has the lateral chambers spaced as at Notgrove, but in the two other sites the chambers on each adjoin a common dividing wall.[10] Notgrove differs from the others in having a large 'ante-chamber' immediately west of the entrance.

Comparisons are often made[11] between this group of chambered barrows and certain Breton tombs,[12] e.g. Mané Bras and Mané Groh (both in Erdeven, Morbihan), and while some of the Breton tombs[13] are morphological analogues, the majority of those cited are more probably passage graves, with the chamber divided. It must be emphasized that Notgrove and the other tombs listed above are not passage graves, but gallery graves with side-chambers, and as such there are few significant parallels among the chambered barrows of north-western Europe. It seems most probable that this group of tombs represents a regional evolution in southern Britain from the short and long gallery graves without transeptal chambers.[1]

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[1] *L.B.C.*, 127.

[2] *British Barrows*, 514.

[3] *Antiq. Journ.*, I (1921), 183.

[4] *Arch. Camb.*, 5th ser., xi (1894), 1 ff.

[5] *Archaeologia*, xix (1821), 43–8.

[6] *Gent. Mag.* (1789), lix, 392, 602, and (1782), lxii, 1188 (Nempnett Thrubwell is now destroyed).

[7] See Crawford, *L.B.C.*, 102–6.

[8] *Ibid.*, 119–22.

[9] *Journal of the Ethnological Society*, Jan. 1871; and *Arch. Camb.*, 4th ser., ii (1871), 168 ff.

[10] Capel Garmon (*Arch. Camb.*, lxxxii (1927), 1) may also be cited as a possible example of the transeptal plan, but the whole setting of this barrow is anomalous.

[11] e.g. Ford, *American Anthropologist*, 32, 92; Nordman, *Finska Fornminnesforeningens Tidskrift*, 29:3, 80.

[12] Le Rouzic's Class II, 2 d ('Tumulus avec dolmen à galerie et à chambres latérales'), in *L'Anthropologie*, xliii, 241.

[13] e.g. Clud-er-Yer and Keriaval (both in Carnac).

Observations

The monument, as excavated, has yielded some evidence in spite of its ruined condition. The structural details prove a long barrow without parallel, but it is possible to recognize other members of the small group to which it belongs and consider them as having developed in their own way in southern Britain. It has been said that the chambered long barrows of England agree in type, but each has its peculiarities.[2] The 'dome', with its cist and skeleton, calls for particular attention, and of the ritual nothing can be said with certainty except that fire was important; and that if the barrow was not intended to be reopened by its builders, one of the two theories relating to the occupants, which we have already discussed, must be adopted. The human bones placed in front of the entrance, a young person and a young child, and the bones of a girl on the dome are suggestive, but speculation is idle. The construction itself would probably not be paralleled elsewhere, because the site itself called for ingenious modifications, and the study of its position reveals the reasons why the site was important. The pottery and the flint leaf-shaped arrow-head are confirmation of the date which is usually assigned to long barrows, and the rare beads and bone tools can also be used to support this view.

In short, nothing has been discovered to make it desirable to reconsider the age of chambered long barrows, which is generally believed to be late Neolithic. The barrow was probably partially destroyed in early times. Wayland's Smithy was proved to have been disturbed in the first century B.C., although it is not known how much earlier the disturbance took place, and it is curious that at Notgrove, in addition to the coin of Hadrian, there should be a scrap of Roman window-glass and two bits of Roman wall-decoration, though there is no Roman building known within four or five miles. Since the first disturbance the central passage and the chambers have been robbed and examined on many occasions; but because the ante-chamber was completely filled up and reburied it escaped the attentions of these later people. It is to be noted that no modern object of any kind was found in its infilling, in sharp contrast to other areas where numerous finds of different centuries were made. This no doubt saved the horned entrance and the material with which it was blocked. The dome may have been discovered about A.D. 127, but it would be very unusual for materials to be replaced in those days, especially when belonging to a conquered people, and collapse and decay may account for the disturbed appearance which was to be observed on the northern half but was absent on the south of the dome.

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[1] The writer is indebted to Mr. Glyn Daniel for parallels.

[2] *Antiq. Journ.*, I (1921), 187.

The general robbing of the mound has prevented more details of the construction being discovered, but probably when another long barrow is excavated, perhaps in a less ruinous condition, the missing points in this excavation will come to light.

APPENDIX I

Report by Dr. A. J. E. Cave on Human and Animal Remains

Top of Dome and Chamber A. 1, lower end tibia; 2, skull fragments; 3, frontal bone; 4, petrous temporal; 5, vertebra; 6, pieces of cervical vertebrae; 7, odontoid process of axis (aged 14–19 years); 8, sternum; 9, ribs; 10, capitellum of humerus; 11, ulna (upper end), 11 *a*, ulna; 12, pieces radius; 13, carpal scaphoid; 14, top of tibia; 15, metacarpal; 16, metatarsal; 17, ribs; 18, clavicle. Young person, probably female, 16–20 years old.

Chamber A. Human teeth—all healthy and adult. 1, foetal axis vertebra; 2, foetal coracoid of scapula; 3, axis vertebra (aged about 12–14 years); 4, another axis vertebra —immature; 5, bits of young skull; 6, phalanges (various); 7, ribs; 8, fragment of clavicle (young person); 9, scapula—axillary border (adult); 10, petrous temporal. The remaining pieces too indeterminate.

Chamber B. Left adult radius, one metatarsal, ungulate tail vertebra.

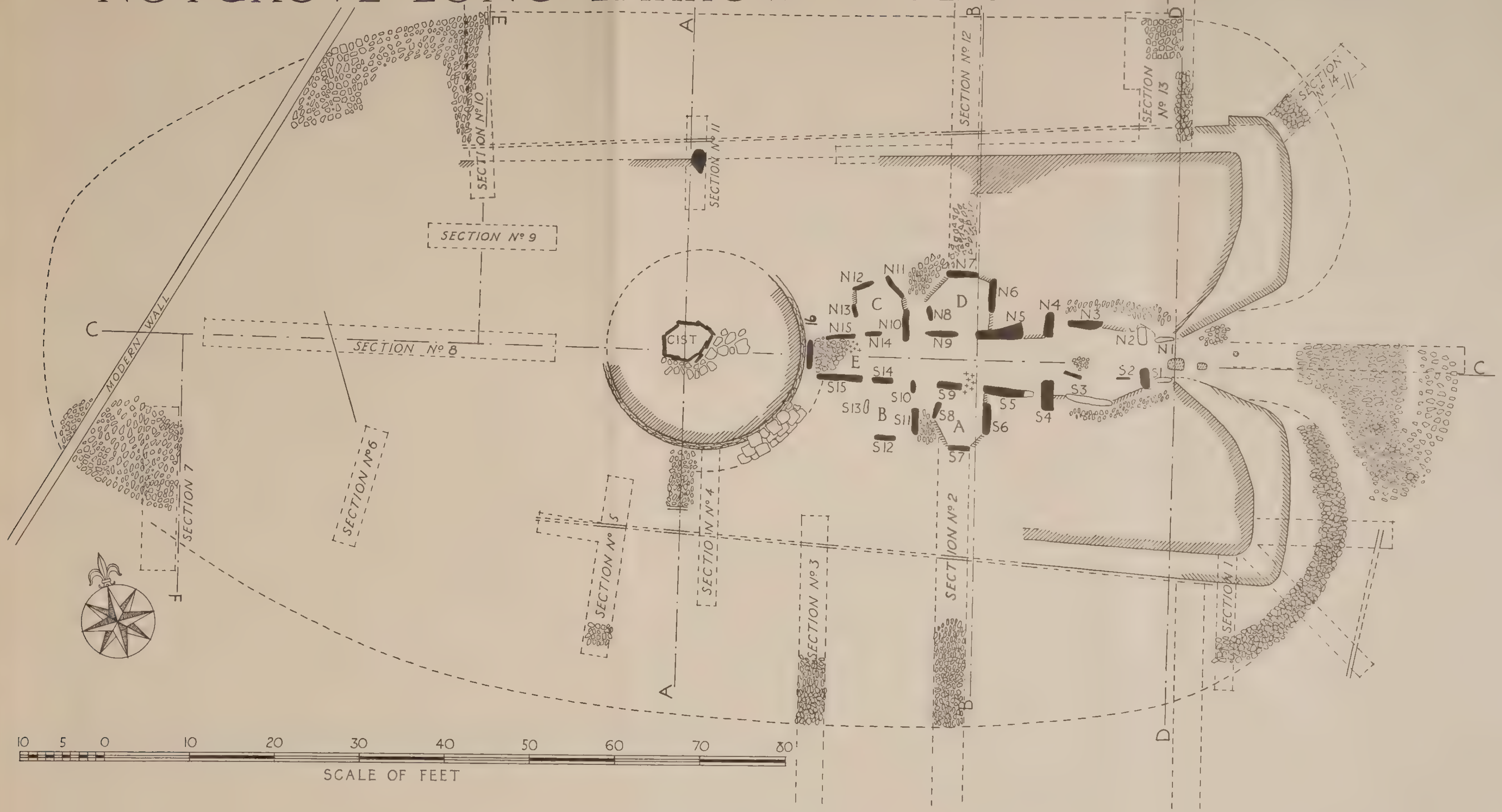
Chamber C. 1, Left half adult atlas vertebra; 2, fragment human cranium; 3 A, B, a left radius; 4 A, B, C, a right radius; 5, fragment of two ulnae; 6 A, B, humerus; 7, condyle of femur; 8, chip off femur; 9, rib; 10, sternal end of clavicle.

Top of Dome. 1, right malar bone; 2, angle of mandible; 3, orbital fragment, 4, ? pelvic chip; 5, shaft of immature femur; 6, thoracic vertebra; 7, mid-cervical vertebra; 8, first coccygeal vertebra; 9, sacral fragment; 10, ribs; 11, skull bits; 12, fibula; 13, metatarsal; 14, metacarpal; 15, phalanges of hand.

Chamber D. Left and right patellae; D.V., dorsal vertebrae (rheumatic); C.V., cervical vertebrae; 1, left scaphoid (foot); 2, right talus; 3, metatarsal; 4, ribs (senile); 5, lower end of right ulna; 6, the calcified thyroid cartilage; 7, left cheek region of skull; 8, piece of left parietal bone; 9, worn molar tooth; 10, radius. Elderly rheumatic male.

Concerning the question of the number of individuals present in these remains one can only recognize, with certainty, the following: (1) an elderly male, severely crippled by osteo-arthritis; (2) a young woman of perhaps 17–19 years; (3) a possible third adult; (4) a very young infant (or foetus near term); (5) a child of about 12–14 years; and (6) another child of about the same age.

NOTGROVE LONG BARROW GLOUCESTERSHIRE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MODERN WALL
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SCALE OF FEET

Notgrove Long Barrow: General Plan

Published by the Society of Antiquaries of London, 1937

Near Portal. Human remains.

1, piece cranial vault—very thin and probably from young person; 2, ditto; 3-7, ditto; 8–12, ditto; 13, scapula fragments, probably human (not certainly); 14, fragments of ribs; 15, fragment maxilla, showing palate, tooth socket, and antrum; 16, skull fragment, floor of middle cranial fossa (sphenoid); 17, pelvic fragment (ilium); 18, long bone —most likely femur; 19, right half neural arch—young child's cervical vertebra; 20, chip of pelvis showing small area of acetabular cavity, youngish person; 21, carpal bone; 22, phalanx—finger; 23, ditto; 24, lower premolar tooth—showing great attrition of crown, but no disease.

Cist within the Central Dome.

Fragment of occipital bone; axis vertebra complete; thoracic vertebra; uppermost ribs; acromion process of scapula; metacarpal of index finger; a left metatarsal; scaphoid bone of wrist; damaged carpal bone; internal cuneiform of right foot; great toe – phalanx; phalanges—hand; twelve teeth. The obviously large robust bones are in all likelihood those of an adult male subject.

APPENDIX II

Report by A. S. Kennard, A.L.S., F.G.S., on the Non-Marine Mollusca

A series of non-marine mollusca were submitted to me and nine species were represented, viz.: *Vallnia costata* (Müll.), *Goniodiscus rotundatus* (Müll.), *Arion sp.*, *Helicella cellaria* (Müll.), *Xerophila itala* (Linn.), *Vortex lapicida* (Linn.), *Arianta arbustorum* (Linn.), *Cepaea nemoralis* (Linn.), *Cepaea hortensis* (Müll.).

All the shells are well developed, whilst the examples of *Helicella cellaria* are decidedly larger than average living specimens. There is a marked absence of the typical grassland species. The conditions indicated would appear to be a scrub growth or very coarse herbage, and decidedly damp. The total absence of the common garden snail *Helix aspersa* (Müll.) is additional proof that it was introduced (except possibly in Cornwall) in Romano-British times.

APPENDIX III

Report by J. Cecil Maby, B.Sc., on Charcoals and Soils

Section IX. Filling of trench, North Corner:

Fraxinus excelsior (Ash). Mature wood, tangentially collapsed, 1; early-formed branch wood, 1; mature and senile wood, very slow grown, 12; mature wood, 2.

Portal, dark brown layer (overlaid by yellow):

Prunus sp. (Plum or Cherry). Knotty fragment of early-formed wood, 1.

Under Turf (Sealing):

Fraxinus excelsior (Ash). Early-formed wood, probably from small branch, 1.

Forecourt (*13 ft.*):

Fraxinus excelsior (Ash). Mature wood of slow growth, 6; ditto of porous growth, 9.

Corylus avellana (Hazel). Mature wood, 2.

Fire (*Centre Entrance*):

Fraxinus excelsior (Ash). Mature wood, slow grown and porous, 14; mature wood, 3. Also many more fragments evidently of same wood, a lump of sandy clay containing charcoal dust, and a fragment of animal bone (*sp.* ?).

Forecourt Depression:

A reddish clay containing some wood-charcoal dust and small embedded particles, some fragments of limestone, and the following larger charcoal fragments:

Fraxinus excelsior (Ash). Mature wood, 3.

Ulmus sp. (Elm). Probably common field elm (*U. campestris*), mature wood, 3.

Also some plant bast fibres (*sp.* ?) and a lump of crystalline limestone, as if by aqueous deposit in a small cavity. And N.B.—that one lump of clay-charcoal conglomerate looks to be hand-moulded.

Ante-Chamber:

Reddish-yellow clay containing wood-charcoal dust and a few small embedded particles of same of indeterminate *spp.*, marine-shell fragments (from the Triassic limestone), some fragments of animal bone (*sp.* ?), limestone fragments, and a curved hollow spicule about half an inch long by a sixteenth diameter. This spicule, which was already broken across, was hollow. It did not appear to be of shell or bone, but it resembled a natural object, not an artifact, I thought.

Central Fire (*Forecourt*):

Apparently the remains of a hearth. Broken limestone slats (natural origin ?) and limestone dust mixed with wood-charcoal dust and particles (for *spp.* see below). Also various whole and broken land mollusca—apparently of a common small species—and some intrusive plant rootlets.

Corylus avellana (Hazel). Early-formed wood, 1.

Fraxinus excelsior (Ash). Mature, slow-grown, and porous wood, 20.

APPENDIX IV

REPORT BY L. RICHARDSON, F.R.S.E., F.G.S., ON THE GEOLOGY OF THE SITE AND THE NATURE AND SOURCES OF THE CONSTRUCTIONAL STONES

The barrow is high up on the Cotswolds on the geological formation known as the Inferior Oolite. This rock is separable into numerous sub-divisions, which hereabouts include, in descending order: Upper Trigonia Grit, Notgrove Freestone (the top stratum of which is liberally bored by annelids and has large oysters adherent to the surface), Lower Trigonia Grit, traces locally of Snowshill Clay, argillaceous Harford Sands, and yellow Guiting Stone.

The barrow is on the Lower Trigonia Grit—a slightly iron-shot rubbly limestone with which is associated, especially in the lower part, marly clay. Certain of the exploration trenches laid bare the underlying traces of Snowshill Clay and argillaceous Harford Sands.

The Lower Trigonia Grit, as a result of weathering, produces a red clayey soil, and, of course, where traces of Snowshill Clay occur at the surface the soil is more markedly clayey. The stone walls and stones used for infilling have by their weight compressed the clay soil and given rise to a layer of somewhat tough red clay. The clay floor is therefore natural, but in some places under the walls where the clay is thicker it may be that some additional clay has been placed there to level up the ground on which to build the walls.

To the west of the barrow some quarrying has been carried on in comparatively recent times, and the shallow quarry was continued eastwards to the foot of the barrow. The orthostats numbered N and S 5, 14, and 15, N 10, 13, 3, and 4, S 2 and 11, and the only stone which is not paired, no. 16, are yellow Guiting Stone; no. 5 N and S are in parts considerably pisolitic, and N 4 harder and irregularly flaggy. Guiting Stone occurs in the side of the valley to the westward and has been worked in a small quarry south of the signal-box at Notgrove station.[1] The orthostats of this rock were probably obtained from the valley referred to.

Those numbers N and S 6, 7, 9, and 12, S 4, 8, and 10, are of whitish great oolite limestone, largely made up of crushed shells in a matrix containing scattered ooliths. There are quarries in great oolite limestone not far from the barrow, so that these orthostats are likewise of local stone.

Orthostat no. N 11 is typical Stonesfield slate from the neighbourhood.

The dry-walling is of stone belonging to the Stonesfield slate bed, and the abundant pieces, large and small, used as infilling, and obviously for covering over the whole barrow, are likewise of Stonesfield slate beds. I did not observe in the dry-walling or infilling any other stone than Stonesfield slate beds, although, of course, some pieces of the local inferior oolite rocks may be present among the infilling. Stonesfield slate occurs faulted against the inferior oolite on Aylworth Downs to the north-eastward of the barrow and at and near the surface about a mile and a half E. 5° S., on the south side of the road to Bourton-on-the-Water. At the latter locality there are extensive workings, both old and recent,[2] and much of the 'slate' is in the form of 'presents'[3] and would, therefore, readily attract attention. Mrs. Clifford showed me a piece of limestone in position which she informed me is a sample of those used to close the entrance. The sample was of the more shelly Stonesfield slate bed, but of a stratum that occurs in close proximity to the 'slate' bed and could have been obtained in the same excavation as the slate bed.

The stones shown me by Mrs. Clifford as a sample of those with which the 'dome' was entirely built are of the 'bored bed' of the Notgrove Freestone. This bored bed can be seen *in situ*, overlain by highly fossiliferous upper trigonia grit, in a quarry in a field adjoining the south side of the road about a quarter of a mile to the east by south.[1] It was observed that a piece of 'bored bed' had been used to assist in wedging one of the orthostats (S 5).

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[1] Richardson, L., 'The Geology of the Country around Moreton-in-Marsh' (*Mem. Geol. Surv.*), 1929, 77.

[2] *Ibid.*, 110, 111.

[3] *Ibid.*, 144.

In conclusion, the barrow was built on the ordinary red clayey soil of the district, compressed to a layer of tough red clay by the weight of the structure, and all the orthostats and other stones used in its construction were obtained locally.

APPENDIX V

Note by C. A. Ralegh Radford on the Question of 'Slide'

While in full agreement with Mrs. Clifford's account of these excavations, I find myself unable to accept her interpretation of the extra-revetment material lying beyond the outer wall of the mound. The disturbed condition of the barrow makes certainty impossible, but I do not think that the structure was designed so as to hide this wall, and I should prefer to explain the sequence in the following manner. The facts, which are not in dispute, may be summarized: (1) a large mass of material, the same as that used in the construction of the walls, lies obliquely pitched against the face of the outer wall as though to form a revetment; (2) the entrance was blocked with stones from a different source (these were deliberately placed and have not since been disturbed, among them is Neolithic B pottery and no artifacts of later date); (3) some at least of the material outside the wall was in position when the entrance was blocked.

It should further be mentioned that many of the stones outside the wall are fractured, the fragments lying adjacent but not contiguous. This cannot be due to modern disturbance and it is difficult to explain if the stones were deliberately placed in this position. The arrangement of the material outside the walls with all, even the lowest, stones set obliquely against the wall-face contrasts with that of the blocking in the entrance, where the lowest courses of stone are laid horizontally, the upper layers being tilted. If the wall stood free collapse would take place in two ways: (1) by the fall of individual stones which would slide off the covering, dropping edgewise alongside the wall against which they would lean until covered by the next fall; (2) by the slide forward under pressure of the whole wall. The lowest stones would move slightly if at all, the upper courses being driven farther and farther, the whole causing a gradual overlap of stone upon stone. Both these types of slide can be seen.

The argument that frost would rapidly have caused the disintegration of the wall neglects the factor of a climatic change. The second millennium is generally thought to have been a period of hot dry climate, and any argument based on modern experience must be largely discounted, as frost is the principal destructive agent. The argument that no humus is discoverable between the 'fallen material and the underlying clay' must be discounted for the following reason: (*a*) the hot climate would discourage the rapid growth of plants where favourable conditions of soil moisture, etc., are not present (e.g. on a clay soil which this would be); (*b*) the surrounding ground was grassland, and the rate of accumulation of humus on an exposed surface would be much slower than in

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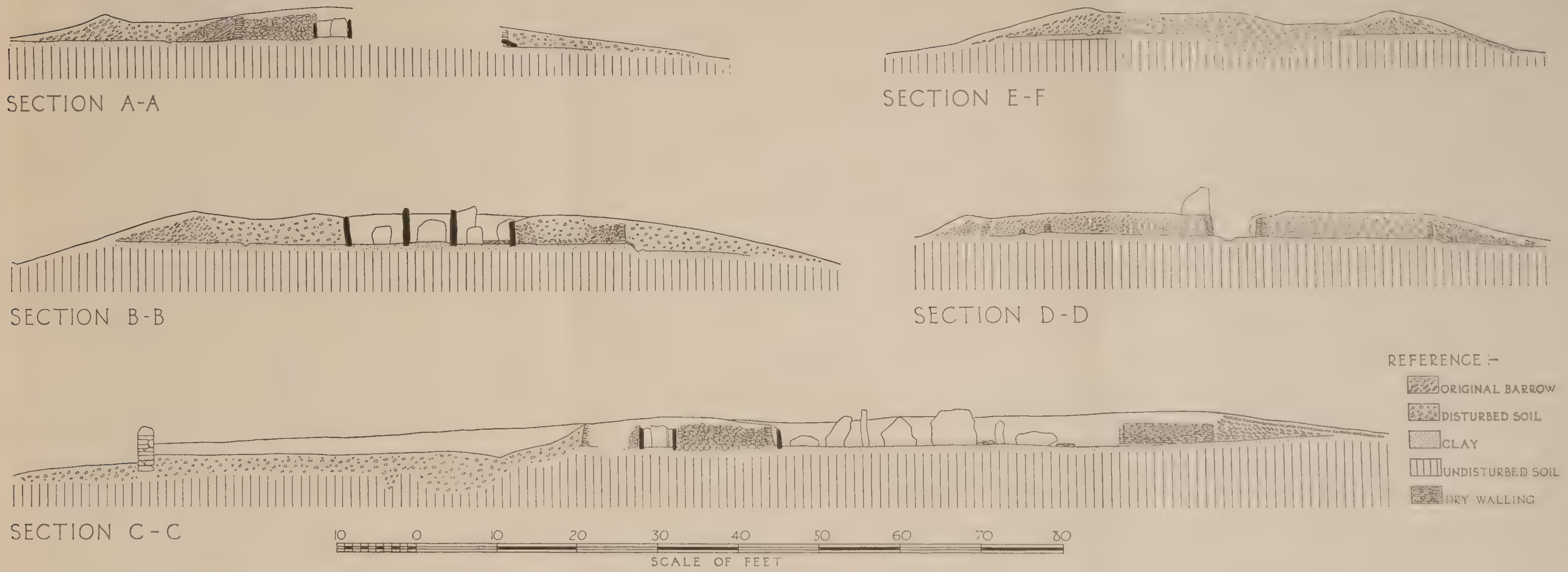
[1] Richardson, L. (*Mem. Geol. Surv.*), 1929, 78.

NOTGROVE LONG BARROW GLOUCESTERSHIRE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ORIGINAL BARROW
DISTURBED SOIL
CLAY
UNDISTURBED SOIL
DRY WALLING
10
0
10
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30
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50
60
70
80
SCALE OF FEET

NOTGROVE LONG BARROW: SECTIONS

Published by the Society of Antiquaries of London, 1937

modern or recent times, when the large arable fields afford a wide source for wind-blown soil; (*c*) the fall began comparatively early, as the presence of some fallen material under the blocking of the entrance proves, i.e., at least as early as Beaker times if we accept the evidence of the sherds in the ante-chamber.

Assuming that this explanation is accepted the following method of construction would be suggested. The mound was built with the inner wall as a functional edge, the material inside this being large interlocked blocks which would relieve pressure on the wall. The outer wall would be a façade, not bonded into the core of the mound and only supporting itself. This is the method followed at Wayland's Smithy and Belas Knap. At the latter the inner wall was not built as a wall, but in the same relative position could be seen a change between the interlocked core of the mound and the unbonded façade with its backing. The dimensions of Notgrove are very close to those of Belas Knap:

	Belas Knap.	*Notgrove.*
Width between walls	58 ft.	56 ft.
Maximum height of mound . . .	18 ft.	?
,, ,, ,, walls . . .	*c.* 6 ft.	2 ft. 6 in.

The final blocking would spread out fanwise between the horns, effectually disguising the outline of this part of the mound. It may be noted that Greenwell was convinced that the blocking between the horns at Pole's Wood South was deliberate, and cites evidence to prove his case. With regard to the side his conclusion is far more guarded. The point made that in some cases the walls were leaning outwards and must therefore have been revetted is really evidence that they were not intended to be revetted. They must always have been built upright or more probably with an inward batter. If left free, pressure from within would force the upper courses outward when the mound was beginning to collapse. But if the wall was covered over at the end of the ceremonies it is difficult to see how the face could afterwards have been forced outwards.

APPENDIX VI

REPORT BY STUART PIGGOTT ON THE POTTERY FROM NOTGROVE, 1935

The pottery obtained by Mrs. Clifford from various parts of the Notgrove long barrow consists largely of indeterminate scraps which it would be dangerous to assign to any narrowly defined culture or period. It is possible that many of these unornamented featureless fragments may be Neolithic A, but it is only safe to make this determination in a few instances where such characteristics as rim-forms are present, as for instance one sherd found in clay in the entrance, which has a thickened rim (fig. 7, no. 1) and strongly resembles sherds from Abingdon. The sherds from chamber D strongly suggest Neolithic A by their colour, backing, and texture (pl. XLI, fig. 3).

With regard to Neolithic B wares, there can be no two opinions about the sherds forming a large fragment of a bowl found in material which closed the entrance (pl. XLI, fig. 4). The ware is hard and slightly sandy, with a greyish black to buff exterior, and a black interior, and is quite distinct from the shell-gritted sherds provisionally assigned to

Neolithic A. The sherds represent part of the neck, the shoulder, and much of the lower part of a characteristic Neolithic B bowl, and the ornament consists of shallow grooves arranged in zones of chevrons. The grooves on the neck have transverse markings, probably with a finger-nail, in an attempt to reproduce the whip-cord maggot *motif* typical of much Neolithic B pottery. Such a crude and half-hearted imitation suggests at least provincialism and probably decadence.

Rim fragments from upper level of blocking have decoration of impressions probably made with the articular end of a bird-bone, and may in consequence belong to the Neolithic B group, but they are not typical (fig. 7, no. 9).

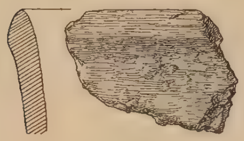

Fig. 8. Pottery rim from 1881 excavation ($\frac{1}{4}$)

With regard to the relative dating of the Neolithic A and B cultures at Notgrove, it is doubtful whether any chronological distinction can be made. Neither the sherds derived from the original excavations of the last century, and now in Cheltenham Museum, nor those recovered by Mrs. Clifford this year, give any definite indication of the phase of Neolithic A into which they should be placed, although, if the parallel with Abingdon suggested above be given weight, it would indicate a late date in Neolithic A 2. The fragments at Cheltenham are in all senses anomalous—the slight curvature, indicating a very large vessel, coupled with the thinness of the sherds, is exceptional, nor is the curious beaded rim less remarkable (fig. 8). If an A 2 date be held likely on the Abingdon analogy, it seems improbable on our present evidence that this culture penetrated the Cotswold area much before that of Neolithic B, which was already in the Upper Thames Valley before the abandonment of the Abingdon site. Nevertheless, the position of the definitely Neolithic B sherds in the entrance blocking is in accordance with a re-use of the tomb by these people at a date slightly later than its original construction.

APPENDIX VII

Report by Dorothea M. A. Bate on Animal Remains

Remains of thirteen species of mammals and a few imperfect limb-bones of a frog or toad are included in the collection from Notgrove barrow. Five of the mammalian species probably represent domesticated animals, while the other eight species include several burrowers, some of the bones of which may be of more recent origin than the deposit in which they were found. The wild species, with the exception of the ? wolf, are all such as might be found in the vicinity of the barrow at the present day.

A few fragments of burnt bone were found in the infilling of the entrance, 1 ft. 6 in. from the top. Otherwise, there is no evidence of burning or artificial breakage among the other specimens.

The following species have been identified:

(1) *Talpa europaea* Linn. Mole. A mandibular ramus and a few limb-bones from the passage.

(2) *Canis sp.* Wolf or dog. This animal is represented by only a single specimen from the top of the dome. This is a left mandibular ramus retaining only the canine

and the first premolar, so there are hardly sufficient data for definite determination. Compared with that of a recent wolf the ramus is not very stout and the anterior premolar is small, suggesting that this specimen may represent a large domestic dog.

(3) *Vulpes vulpes* Linn. Common fox. A small imperfect ulna from the blocking of the entrance is rather doubtfully referred to this species.

(4) *Mustela nivalis* Linn. Weasel. A skull and a mandibular ramus come from the covering of the mound. From their appearance these seem to be of rather recent origin.

(5) *Oryctolagus cuniculus* Linn. Rabbit. There are a number of fragmentary jaws and limb-bones of rabbits, some being those of young animals. Burrowing habits may account for the presence of these specimens, which occurred in the dome and end of tail outside wall.

(6) *Evotomys glareolus* Schreber. Bank-vole. This vole is represented by an imperfect skull from a disturbed area, north side of forecourt, and by a mandibular ramus from the passage.

(7) *Microtus agrestis* Linn. Short-tailed field-vole. Two mandibular rami of this vole come from the dome, and from the covering of the mound.

(8) *Arvicola amphibius* Linn. Water-vole. One mandibular ramus from the dome.

(9) *Apodemus sylvaticus* Linn. Long-tailed field-mouse. One mandibular ramus from the portal.

(10) *Sus* (?) *scrofa* Linn. Pig. A few teeth, and a fragment of a maxilla of a young animal, came from the forecourt, passage, and top of the dome. These few specimens do not show whether they represent a wild or domestic form.

(11) Sheep or goat. Two upper cheek teeth and an ungual phalanx came from the forecourt, passage, and the covering of the mound.

(12) *Bos sp.* Small ox. A small ox is represented by a few upper cheek teeth and a number of limb-bones from the entrance, blocking of entrance, forecourt, and passage. From the last situation come a number of foot-bones including a complete metatarsus with a maximum length of 23 cm. In the absence of skull and horn cores it is not possible to know to what race of small ox this form belonged—the name *Bos longifrons* is used generally for small oxen from the Neolithic and Bronze Ages, but several breeds have been distinguished. In his study of Neolithic camps Dr. Cecil Curwen found that the small ox remains were those of a breed quite distinct from that commonly found in the Iron Age (*Antiquity*, March 1930).

(13) *Equus caballus* Linn. Horse. Three lower cheek teeth of horse were obtained, from under turf sealing, forecourt, and passage. It is unfortunate that so few specimens occurred, for seemingly Neolithic sites do not always yield remains of this species (see Curwen, *op. cit.*).

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Neolithic A. The sherds represent part of the neck, the shoulder, and much of the lower part of a characteristic Neolithic B bowl, and the ornament consists of shallow grooves arranged in zones of chevrons. The grooves on the neck have transverse markings, probably with a finger-nail, in an attempt to reproduce the whip-cord maggot *motif* typical of much Neolithic B pottery. Such a crude and half-hearted imitation suggests at least provincialism and probably decadence.

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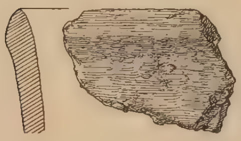

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APPENDIX VIII

Notes by C. A. Simpson on the Site of Notgrove Long Barrow

In order to understand the position of the Notgrove barrow, the well-known fact must be borne in mind that the Cotswold plateau dips gradually to the south-east and south towards the valley of the upper Thames, from a steep escarpment facing west and north-west overlooking the plain of the lower Severn. From this on a clear day the mountains of central Wales can be seen. This scarp has been worn back unevenly into a series of indentations separated by projecting spurs, most of which are crowned by ancient earthworks, as are many of the outliers which have become separated from the main band of upland. Down the dip-slope of the Cotswold plateau streams flow to join the upper Thames. In the central Cotswolds, nearly parallel valleys are separated by bare uplands, covered, for the most part, by porous limestone. The surface is also indented by a complicated system of dry valleys which complete the pattern made by those occupied by streams (fig. 4, p. 134).

Other streams, flowing to the Severn, break through the scarp edge on to the western plain, through striking gaps such as those occupied by the towns of Stroud, Cheltenham, and Winchcombe. The two deep valleys from which emerge the Frome at Stroud and the Isborne at Winchcombe may be considered as defining an area which may be called the Central Cotswolds; and a line drawn from the mouth of the latter valley eastward to Moreton-in-Marsh would pass just north of the head-streams of the Thames. If we take the southernmost tributary of the Frome as our southern boundary, we shall find that this area contains most of the long barrows of the Cotswolds. Mr. Crawford's map[1] shows two areas where long barrows are chiefly concentrated, that round Avening, south-west of Stroud, and that near Upper and Lower Swell, west of Stow-on-the-Wold. Between these two districts long barrows are fairly evenly distributed, for the most part on high, and more particularly on dry, ground. That at Notgrove is situated at about a quarter of the distance from the Swell group south-westwards towards the Avening group, and at about one-third of the distance from the scarp at Cleeve Hill to the district where the dip-slope of the Cotswolds may be considered to end. It is, therefore, in a fairly central position in the Cotswolds, at an altitude of nearly 800 ft., and lies between the valley of the river Windrush (here flowing south-eastwards) and one of its tributaries on the south. Both of these flow down the dip-slope of the plateau.

The interest of the position of this Barrow can only be realized by means of a close examination of the country and the help of large-scale maps. These show the head-streams of the Windrush converging near the point where that river is crossed by the Fosseway, here running north-eastwards from Cirencester. The Windrush is joined by another stream about four miles to the south of this point. These streams occupy four deep valleys separated by three intervening ridges which taper towards the south-east. In this district the plateau is of Jurassic limestone. Here, according to the geological sequence, Great Oolite rests on Fuller's Earth, which in its turn covers a great thickness of Inferior Oolite, which again covers, in descending order, deposits of Upper, Middle, and Lower Lias. The distribution of these rocks is, on the surface, much complicated by faulting.

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[1] O. G. S. Crawford, *L.B.C.*

Valleys have cut into the plateau through its capping of Great Oolite and the underlying deposit of Fuller's Earth (which gives rise to springs at a high altitude), and some have reached a floor of Inferior Oolite limestone. It is in such valleys, or in certain reaches of the longer valleys, that streams disappear beneath the surface to reappear where an impermeable floor is reached. The four streams mentioned above (which converge not far from the place where the Windrush is crossed by the Fosseway) cut down through progressively lower formations until the lower lias clay is reached. Between two of the streams, moreover, are gravel deposits above the clay valley floor. This arrangement of nearly alternating pervious and impervious rocks means that springs at various altitudes are plentiful on the valley sides. It is near the most easterly of these four valleys that the concentration of the barrows near Swell is to be found.

Naturally the limestone surfaces of the intervening ridges would provide comparatively dry and open country for primitive travelling. West of the Swell barrows a straight north-to-south track[1] points towards the junction of streams near Bourton-on-the-Water. A group of barrows near Eyford lies close to it on the west, as that at Swell does on the east. Mr. Crawford considers that a road on the next converging ridge, coming from the north-west and known as Buggilde Street, or Buckle Street, is of great antiquity. It is now a mere trackway in parts, but is a good road before it reaches the Fosseway, at Bourton-on-the-Water. It is bordered by barrows at short intervals. Although these two routes are of little importance to-day, a more frequented road runs from the Fosseway westwards (south of the Windrush) on the third and most southerly of the three ridges. This completes the 'pattern' of converging upland routes between each of the four valleys. No indication is given on the Ordnance Survey maps that this southerly road, marked on the 6-in. map as Stanborough Lane, is ancient. It, however, passes a long barrow as it climbs on to the upland about a mile from the Fosseway, and Dr. Grundy includes it amongst the ancient ridgeways of the Cotswolds.[2]

Stanborough Lane follows the crest of the ridge westwards, incidentally forming the boundary between the parishes of Naunton and Notgrove. It proceeds over Hawley Downs at a height of 900 ft., and then descends near the water-parting, between the Coln, which flows south to the Thames, and the Isbourne, flowing north to join the Severn. The two streams together have formed a depression which has almost converted the Cleeve Hill plateau into an 'outlier', instead of a spur, of the Cotswold scarp. Our road crosses this depression at a point where its clay floor narrows. Thence paths diverge over Cleeve Hill, one leading past the long barrow called 'Belas Knap' and another to the tumulus near the scarp edge.

Notgrove barrow is situated on Stanborough Lane, about mid-way between its crossings of the Windrush and of the Coln. The barrow is near the crest of the ridge, at an altitude of nearly 800 ft., the ground rising, very slightly, to the south-east. From the near neighbourhood of the barrow commanding views over the district are obtained. It occupies, moreover, a curiously central position between the heads of four small streams which flow away in several directions. Water from four sources, therefore, might have been available there, long ago. Moreover, near together as are these streams to-day, the dry valleys at their heads are nearer still, and, supposing that the 'water-table' in the limestone had ever been at a higher level than it now is, the barrow would have been set still closer to several diverging streams, although well above them.

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[1] G. B. Witts, *Archaeological Handbook of Gloucestershire.*

[2] G. B. Grundy, 'Ancient highways and tracks of Worcestershire and the Middle Severn', *Arch. Journ.* xci (1934), 66.

A 'round barrow' is recorded to have been found close by, and destroyed when the railway from Kingham to Cheltenham was made. These facts, and that of a 'natural route' along firm dry ground having been obviously marked out along this ridge, suggest that the site of Notgrove barrow may have been of some significance.

It has been suggested, too, that, in addition to its commanding position on a 'ridgeway', Notgrove barrow may have been placed at the crossing of two routes, or, rather, at a meeting-place of four. This is not indicated clearly by the current Ordnance Survey maps, but an examination of earlier editions, and of the ground, reveals the following facts, which may be of interest to those who care to follow up such clues elsewhere.

Stanborough Lane, where it passes north of Notgrove barrow, runs from approximately ESE. to WNW. A trackway is shown on the 1-in. Ordnance Survey map of 1828, and on the Geological Survey map of the mid-nineteenth century, running north-eastwards. It leaves Stanborough Lane immediately opposite the barrow. This path was closed when the railway was made. Its course is now marked by a field boundary, which, moreover, is used for the Union and R.D. boundary. The path left the limestone surface of the upland to cross a patch of furze, on an outcrop of Fuller's Earth, but the ground is here so steep that the soil on this outcrop was dry even after the heavy rains of December 1935, so even here it may not have been an obstacle to travel in early days. The path, however, took the shortest route across this outcrop, to reach a dry valley-bottom, on limestone, where 'Downs Barn' now stands. From this point, a line of paths (parts of which are still in use) can be traced, with little variation from a general north-easterly direction, to Harford Bridge, over the Windrush.

This line of route presents some problems. As seen on the map, it does not suggest an ancient trackway, as it follows, not a ridge, but a valley, but it is important to note that the section from Downs Barn to Aylworth Farm is in a dry valley, with a limestone floor. Before reaching Aylworth Farm, the track is sufficiently sunk in this floor to suggest its use throughout a long period. From this point, too, the site of Notgrove barrow is clearly visible.

Aylworth Farm is situated near a spring which emerges near the junction of this valley with others. From this point, our route follows a stream, and the path now used crosses marshy ground from time to time. There are, however, indications of a parallel track, high up above the stream, on a valley-side which is considerably steeper than the 6-in. map suggests. For part of its course the path is again sunk below the surface, although on a valley-side. It runs behind a hedge, and a spring emerges from beneath it and flows to the stream below. Beyond the end of the hedge the path follows a kind of 'terrace' on the valley-side, still parallel with the stream.

The route diverges from its straight course in order to avoid the junction of several marshy valley-bottoms, climbs a steep slope, and continues along a 'shelf'. Its old course can be traced in fields beyond the point (Lodges Barn) up to which it is marked on the 6-in. map. Parts of the route are shown in the (older) geological map, and in the Ordnance Survey of 1929. There are, farther on, slight indications in a field (raised well above the valley) that the path finally pointed towards the river below Harford Bridge, and reached it opposite the road running thence to Upper Slaughter and the barrow at Wagborough Bush.

Two features of this line seem to be significant. In spite of the broken surface of the country, and the windings of the valley, the site of Notgrove barrow is almost continuously visible along the route. And the fact that more old buildings stand by this (now partly disused) trackway than along the more frequented road to the south suggests its use during a long period before the days of modern traffic.

If we return to Notgrove barrow, we find that a path runs south-westwards from Stanborough Lane at that point and continues the line of the path towards the north-east which we have just traced. This lane is still used. Sunk below the land surface it crosses a dry valley near its head and so winds that it avoids steepest gradients, for the valley-sides become steeper 'down stream'. The site of Notgrove barrow is, again, visible from this track, and worked flints have been found in a field crossed by the lane. West of some old stone farm buildings (known as 'Crows' Castle') the route is now interrupted by the railway, but a path continues beyond it. The map of 1828 shows it as a road leading to the village of Salperton, south of which again is a cluster of barrows.

It is obvious that much detailed work in the field is needed before any definite conclusion can be reached as to the possible age of this route, and whether the barrow at Notgrove was intentionally placed at a cross-road. But perhaps the foregoing observations may encourage further investigations.

VIII. *The Town and Castle of Conway*

By SIDNEY TOY, *Esq., F.S.A., F.R.I.B.A.*

Read 26th November, 1936

CONWAY occupies a position of great natural strength and, from a medieval standpoint, of great military importance. It is defended on the one side by the River Conway, here a wide estuary, on the other by the mountains of Snowdonia; and in the middle ages it commanded the road from England into the Welsh strongholds of Gwynedd. It might be thought that the strategic value of such a site would be recognized at an early period, but there is no evidence of its military or communal occupation before the arrival of the Cistercians, whose houses were normally placed on secluded spots, in the twelfth century. The Cistercian abbey of Aberconway was founded about 1186.[1]

In 1198 the abbey was richly endowed by a charter granted by Llewelyn the Great. By virtue of this charter the house enjoyed extensive rights and privileges. It was to be free to choose its own abbots without the interference of the prince or any layman; it was to be exempt from entertaining the prince or any other person on the pretence of custom; all wrecks on its lands were to become the property of the community, but it was still to retain the possession of such of its own vessels as might be wrecked on the lands of the prince.[2] These and other great privileges soon raised the abbey of Aberconway to a position of eminence.

Llewelyn the Great died in 1240, and five years later Henry III advanced into North Wales as far as Gannok, now called Deganwy, and remained there about ten weeks fortifying the castle.[3] A letter written by an officer in the king's forces to his parents gives such a vivid description of the country that it might be quoted in part: 'The lord the king with his army is staying at Gannok for the purpose of fortifying a castle, which is new built in a most strong position there. We are dwelling around in tents employed in watchings, fastings, and prayers. In watchings in fear of the Welsh suddenly attacking us by night; in fastings on account of a deficiency of provisions, for a farthing loaf now costs fivepence; in prayers that we may soon return home safe and uninjured; and we are oppressed by cold and nakedness because our houses are of canvas and we are without winter clothing. . . . A small arm of the sea . . . lies between us and Snowdon, where the Welsh quarter themselves, and is at high tide within a cross-bow shot wide. A ship from Ireland bringing provisions to us for sale was coming up towards the entrance to the harbour, but, being incautiously steered, as the sea receded it remained aground under our aforesaid castle, but on the opposite bank towards the Welsh, who immediately rushed down and made an attack upon it.' An English force, sent across the water, drove the enemy back to the mountains, pursued them for two leagues, and, on returning, 'like greedy and needy men indulged in plunder and spread fire and rapine through the country . . . and amongst other profane proceedings they irreverently pillaged a convent of the Cistercians, called Aberconway, of all its property, and even the chalices and books, and burnt the buildings belonging to it. The Welsh in the meantime, having assembled a large host of their countrymen, suddenly rushed with noisy shouts on our men, who were laden with booty acquired by the most wicked means and impeded by their sins, and put them to flight.' Many were drowned in an attempt to swim across the water, others were slain and their bodies maltreated 'in detestation of their wicked greediness in not sparing the church, especially one belonging to religious men'.[1]

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[1] Dugdale, *Monasticon Anglicanum*, ed. Caley, Ellis, and Bandinel, 1846, v, 671; J. E. Lloyd, *A History of Wales*, pp. 236, 601.

[2] Dugdale, *op. cit.*, 672-4.

[3] Close Roll 28 Hen. III, 1244, Memb. 13; Rot. Lit. Claus. 168.

This picture of the country by an intelligent person who had time to observe for over two months the scene he describes is of great value. It is significant that in his reference to the abbey of Aberconway no suggestion of either town or fortification occurs. But there appear to have been some houses in the vicinity of the abbey, or there would be nothing else to plunder. The Welsh prince undoubtedly had a house at Aberconway a few years later.

Many years of strife followed the events related above, during which Deganwy Castle was razed to the ground. In 1282 Edward I, determined on a decisive conquest of the country, advanced into North Wales with a strong force. Llewelyn, grandson of Llewelyn the Great, was defeated, and by the autumn of 1283 the conquest was complete. As a means of keeping the country permanently in subjection Edward proceeded to build a series of castles in North Wales, associated in some cases with boroughs of English type with their colonies of traders. The strategic importance of Conway was easily recognized by the king, and since the site was already occupied by an abbey, Edward took steps to remove the abbey.

On the 24th June 1284 the king notified all whom it may concern that, 'for the security of his realm and of his whole land of Wales hereafter, he has communicated with the council of his magnates whom it concerned *et edificari*

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[1] Translated from *Matthaei Parisiensis Chronica Magna*; cf. ed. of H. R. Luard, 1877, iv, 481–4.

fecerimus castrum nostrum apud Aberconewey in solo Abbatis et Conventus ibidem and has caused the abbey to be transferred with the consent of the men of religion and of the abbot of Cîteaux . . . to the place called Maynan in the diocese of St. Asaph lest any prejudice should arise thereby to the bishop of St. Asaph or any others whom it concerns, the king promises and binds himself and his heirs to preserve harmless the bishop and church and chapter of St. Asaph and also the parish church within the limits whereof Maynan is situated'.[1] Four days later the king issued a grant to the abbot and convent of Maynan 'that they may have as a parish church the old church of Aberconewey which they previously held as a conventual church' with the tithes belonging thereto; the convent to provide 'two honest English chaplains and one honest Welsh chaplain'.[2]

On 8th September 1284 a charter was granted to the town. Conway was to be a free borough and its men free burgesses; the constable for the time being was to be mayor of the borough, sworn both to the king and the burgesses; the burgesses were to have a gild merchant with a house; they were to have their own prison, though all persons committed for offences affecting life and limb were to be imprisoned in the castle; no Jews were to dwell in the borough.[3] And on the 23rd October following William Sikun was appointed first constable of the castle at the yearly stipend of £190 'on condition that he shall have continually a garrison in addition to himself and his household of thirty fencible men at his cost, of whom fifteen shall be cross-bow men, a chaplain, an artillery craftsman, a carpenter, a mason, and a smith; and from the others there shall be made janitors, watchmen, and other ministers of the castle'.[4]

The appointment of the first constable must have been made in the early stages of building operations. There is no record of expenses on works at Conway before the 26th November 1284, a month after the appointment was made. But neither the roll in which these accounts are entered nor any of the documents immediately following refers to the main walls of the castle except as of works already existing, though many particulars of operations on buildings within the walls are given. It is probable, therefore, that the foundations of the castle were laid in 1283, soon after the end of hostilities, and that its main walls and towers were well advanced by the end of the following year. From November 1284 work on the castle and on the walls of the town proceeded simultaneously, and was often carried out by the same master builders. Four years later the whole work was complete.

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[1] Welsh Roll, Chancery, 12 Edw. I, 1284, Memb. 6; C. 77. 5. The translation in the calendar, p. 285, is inaccurate.

[2] *Ibid.*, Memb. 5.

[3] Charter Roll 12 Edw. I, 1284, Memb. 3; Cal. Rot. Chart. 276.

[4] Welsh Roll, Chancery, 12 Edw. I, 1284, Memb. 2; Cal. Rot. Wall. 292.

The first entries of building expenses occur in the pipe roll of 14 Edward I,[1] which contains accounts of the king's works in North Wales between 13th January 1283 and 25th December 1286. The accounts for works at Conway are from the 26th November 1284 to the 26th November 1285, and reach a total of £3,313 1*s.* 2*d.* Of this sum nearly £2,000 was for wages of excavators, masons, carpenters, smiths, plumbers, and other trades. No particulars of their operations are given. £277 were absorbed in purchases and transport of material, and the remaining £893 on taskwork—i.e. a specified sum for a specified amount of work.

Particulars of the works during the three following years are continued in the pipe roll of 19 Edward I,[2] and for the first ten months of this period also in an exchequer roll of 14 Edward I.[3] The latter contains most interesting details of the works in progress during the time it covers—26th November 1285 to the 29th September 1286. The total expenditure for the ten months amounted to £2,152 16*s.* 3*d.*, of which £999 16*s.* 6½*d.* were absorbed in daywork and £421 2*s.* 11*d.* in purchases and transport. Iron was brought from Caernarvon and Chester, sand from Deganwy, and lead from Flint. Lead was the most expensive item, amounting to £182 out of a total of £315 19*s.* 6*d.* for all purchases. The source of the stone is not stated, but the stone largely employed is a brown sandstone taken, probably, from the quarries of Deganwy. Cords were bought for lining and measuring the walls; grease and oil for the engines of the castle and the engines of master Laurence. These last were doubtless machines for hoisting building-materials in position. Charcoal and lime, silver and tin, nails, boards, and shingles were brought by land and water, the boats being unloaded at the quay at Conway. William de Herlawe, clerk, bought an image at Chester for five shillings for the chapel in the castle.

Of the expenses on taskwork about £100 out of a total of £731 16*s.* 9*d.* was for work on the castle: £7 was paid for works on the *aula domini Ciconis* and on the hospital of St. John in the town; and all the remaining sum was spent on the walls, towers, and gateways of the town. The word *aula* is used frequently in this and subsequent accounts of the castle and town in the sense of a house, or building containing three or more chambers. The *aula domini Ciconis* and the *aula Llewelini* were both houses. The *aula Regis* or *aula Principis* in the castle has three upper rooms called the three chambers *in aula que dicitur aula Principis*.[4]

The pipe roll of 19 Edward I carries the accounts to the 30th November 1288, but no other details are given than of the sums spent on daywork, taskwork, and the purchase and carriage of materials. From the 29th September 1286 to the 12th October 1287 the total sum spent was £1990 9*s.* 0¼*d.* The works must have been practically complete by the end of 1287; for only £258 5*s.* 5½*d.* were spent between the 12th October of that year and the 30th November 1288, when the entries of expenses come to an end. There are no further entries for expenses at Conway, except for small repairs, either in the pipe roll of 29 Edward I, which carries the accounts of the works in North Wales to the year 1301, or in any account for the years immediately following. The total expenditure on the works of the castle and town of Conway between the 26th November 1284 and the 30th November 1288 amounted to £7,714 11*s.* 10¼*d.*

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[1] Pipe Roll 14 Edw. I, 1286, Memb. 26 d.; E. 372. 131.

[2] 19 Edw. I, 1290, Memb. 30; E. 372. 136.

[3] Exchequer Accounts 14 Edw. I, 1286; E. 101. 485. 28.

[4] *Ibid.*, Memb. 2.

About the time of the completion of these works the prior of the Hospital of St. John was sent into North Wales to survey Conway and other castles of the king there. Unfortunately we have no copy of his report.[1]

A check to English rule in Wales occurred in September 1294, when the Welsh rose in revolt under Madog, son of Llewelyn. So serious was the position that Edward abandoned his projected expedition to France and appeared before Conway towards the end of the year. The king crossed the estuary with part of his forces and entered the castle; but a sudden rise in the river prevented the remainder of his army from following him. Meanwhile the Welsh rushed down from the mountains, invested the castle, and carried off wagons and supplies. The king's position for some weeks was serious. But, the river having subsided, the army crossed over, drove back the enemy, and relieved the king. The rebellion ended in the defeat of Madog in July 1295. Conway remained the king's head-quarters throughout this campaign, and at its close the houses in the town were repaired, the Giffin mill rebuilt and small repairs carried out in the castle.[2]

On 7th February 1301 the king, by deed of gift, conveyed all his lands and castles in Wales to his son Edward, henceforth known as Edward, prince of Wales.[3] The years of the Principatus, noted in many documents of the period relative to Wales, are reckoned from that date. This fact is made particularly evident from the heading of a roll of 1305, which gives both the year of the king and of the Principatus: *A festo Sancti Michaelis anno Regni domini nostri Edwardi Regis Angliae xxxij Principatus Edwardi principis Walliae filii Regis predicti anno iiijto incipiente usque ad idem festum anno revoluto*,[4] i.e. 29th September 1304 to 29th September 1305.

During the reign of Edward II small repairs were carried out in the castle, particularly in 1316, when the river wall and postern below the east barbican, having been damaged by heavy seas, were restored: *emendationem posternae subter herbarium versus mare et emendationem muri circa eandem posternam per maris tempestatem disruitam at etiam aliorum murorum ultra predictum herbarium exaltandorum.*[1] At the same time the leadwork of the castle towers was repaired, a cover built over the castle well, and some at the king's houses in the town repaired; work in the town including *emendationem aulae et camerarum Regis assignatarum pro mansione justiciis in Villa de Conewei.*[2]

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[1] Welsh Roll, Chancery, 16 Edw. I, 1288, Memb. 8 d.; Cal. Rot. Wall. 320.

[2] Exchequer Accounts 29 Edw. I, 1301; E. 101. 486. 9.

[3] Charter Roll 29 Edw. I, 1301, Memb. 9; Cal. Rot. Chart. 6.

[4] Ministers' Accounts 33 Edw. I, 1305; S.C. 6. 1211/2.

Edward II had great difficulty in retaining the loyalty of his constables. In 1321 Roger de Mortuo Mari, justice of Wales and constable of Caernarvon, was ordered to proceed in person to many castles, including Conway, 'to see that each constable remain in the custody assigned to him and to have with him as many fencible men as he ought to have, or more if necessary, and to certify to the king of the names of any constables whom he shall find do not make their custody'.[3] In 1324 Roger is himself a rebel,[4] and in 1326, a year before his deposition, Edward placed a woman in charge of Conway castle. The previous constable, having allowed two important Welsh prisoners to escape, was dismissed, and was ordered to deliver the castle and all its effects over to the lady, whose name was Aline Burnel. She was to answer for the safe custody of the castle at her peril and was to receive the same pay as other keepers.[5] It is not known with what address this lady filled the post; but her period of office must have been short, for in October of the following year Henry de Mortuo Mari, then constable of Conway, is granted arrears of pay.[6]

The master of works of the king's castles in North Wales at the end of Edward II's reign was Nicholas de Derneford, who received one shilling a day and had charge of the castles of Caernarvon, Beaumaris, Criccieth, and Harlech.[7] Edward III confirmed him in his office and gave him the charge of the king's castles in South Wales also, increasing his pay to two shillings a day.[8] About three years later Robert de Helpeston was appointed master of works for the castles of North Wales only at the former pay of one shilling a day.[9]

In 1330 and in 1331 repairs were carried out in Conway castle.[10] But it is clear that neither Conway nor any of the other castles in North Wales was properly maintained; for in 1332 the chamberlain of North Wales was ordered

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[1] Ministers' Accounts 9 Edw. II, 1316; S.C. 6. 1211/7.

[2] *Ibid.*

[3] Close Roll 14 Edw. II, 1321, Memb. 10; Cal. Rot. Claus. 290.

[4] Close Roll 18 Edw. II, 1324, Memb. 29; Cal. Rot. Claus. 228.

[5] Patent Roll 19 Edw. II, 1326, Memb. 5; Cal. Rot. Pat. 215.

[6] Close Roll 1 Edw. III, 1327, Memb. 7; Cal. Rot. Claus. 180.

[7] Patent Roll 17 Edw. II, 1323, Memb. 9; Cal. Rot. Pat. 353.

[8] Patent Roll 1 Edw. III, 1327, Memb. 13; Cal. Rot. Pat. 184.

[9] Patent Roll 4 Edw. III, 1331, Memb. 5; Cal. Rot. Pat. 50.

[10] Exchequer Accounts E. 101. 487. 7 and E. 101. 487. 8.

'to cause the necessary repairs to be made to the houses within the castles of Kaernarvon, Coneway, Beaumareys, Crukyth and Hardelagh . . . as the king understands that they are ruinous and not fit for him to dwell in if he should go there'.[1] And on his departure for France in 1338 the king issued a mandate to each of the constables of his castles in North Wales 'to provide his castle without delay with men and necessaries . . . as the king previously ordered him to see to this and hitherto he has done little or nothing, and dangers are feared from a foreign invasion and from the lightness of the head of the Welsh, and if the constable is remiss the king will punish him'.[2] Further repairs were carried out at Conway castle following each of these orders.[3]

On 12th May 1343 the king gave over his properties in Wales to Edward the Black Prince,[4] and on the 28th June following the king's clerk was ordered to survey all the defects in the castles and manors of the principality and to report upon them.[5] The roll drawn up as the result of that survey gives a valuable report of the condition of Conway castle at that period (see p. 181).

Work on the castle was undertaken by the prince four years later under the direction of Henry de Snelleston, his own mason and surveyor.[6] On the departure of the Black Prince for Gascony in 1355 the constable of Conway castle received strict injunction that the castle was to be strongly guarded, as the prince 'knows not how affairs may shape themselves in his absence'.[7] The burgesses 'who have the town to keep at their own peril' were ordered to victual and guard the town.[8] Two years later the yeomen of the scullery were ordered to arrange for the provision of charcoal and other necessaries for the office of the scullery in view of the prince's stay at the castle at Conway[9]—a projected visit apparently not carried out.

By the end of the reign of Richard II the constableship of Conway castle became very much of a sinecure. In 1394 it was held jointly by the Bishop of Salisbury and Thomas de Percy, steward of the royal household,[10] and in 1398 by William Lescrope, earl of Wiltshire.[11] The king himself came to Conway in 1399, on his return from Ireland. There are different versions of the sequence of events after his arrival at the castle, but it would appear that negotiations between the king and the delegates of the duke of Lancaster took place at Conway and that the king actually submitted himself to the duke at Flint.

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[1] Close Roll 6 Edw. III, 1332, Memb. 4; Cal. Rot. Claus. 471.

[2] Close Roll 12 Edw. III, 1338, Memb. 33; Cal. Rot. Claus. 542.

[3] Close Roll 6 Edw. III, 1333, Memb. 1, and Exchequer Accounts; 13 Edw. III; E. 101. 487. 10.

[4] Charter Roll 17 Edw. III, 1343, Memb. 18; Cal. Rot. Chart. 14.

[5] Patent Roll 17 Edw. III, 1343, Memb 8; Cal. Rot. Pat. 56.

[6] *Registers of Edward the Black Prince*, i, 46. 61. 95.

[7] *Ibid.*, iii, 492. [8] *Ibid.*, 221. [9] *Ibid.*, 271.

[10] Patent Roll 18 Rich. II, 1394, Memb. 38; Cal. Rot. Pat. 447.

[11] Patent Roll 21 Rich. II, 1398, Memb. 32; Cal. Rot. Pat. 322.

During the Welsh rising under Owen Glendower in 1401, Conway castle was taken by the insurgents and the town plundered and burned. The royal forces under Henry de Percy, who was justice of North Wales, constable of the castles of Chester, Flint, Conway, and Caernarvon, and sheriff of Flintshire, laid siege to the castle. After an investment of four weeks Henry was ordered to arrange terms with the rebels, who were subsequently pardoned.[1]

Many prisoners were confined in the castle from time to time: criminals, prisoners of state, and prisoners of war. Twelve of the prisoners taken at Meaux in 1422 were imprisoned in Conway castle. The captives were brought from France and placed first in the Tower of London, and from there 150 of them were distributed among nine castles in England and Wales. The constable at each of these castles was instructed to come to London as quickly as possible, receive the prisoners allotted to him, and conduct them to his castle 'with all possible speed and take horses and carts for their carriage and fencible men for their safe conduct'.[2]

The castle appears to have been kept in fair repair until about the middle of the sixteenth century, and small sums were spent on works there from time to time. But after the reign of Henry VIII it was allowed to fall into disrepair, and by about 1590 it was abandoned and ruinous. A report sent to the earl of Suffolk, High Treasurer of England 1613–1620, describes Conway Castle as then in a state of 'great ruin and decay, whereof the greater part hath been down and uninhabitable for manie ages past: the rest of the tymber supporting the roofe, is all, or for the most part, rotten, and growth dayle by wet more and more in decay, no man having dwelt in any part thereof these 30 years past: the leades are for a great part gone, the mayne wall being of a ragged hard and small stone, is of no value or worth'.[3]

However, in 1643 the castle was put in a state of repair and held for the king by John Williams, archbishop of York; the archbishop carrying out the work at his own expense on the promise of repayment by the king. The inhabitants of the neighbourhood, anxious for the safety of their property, brought their plate and other valuables to the castle for security. Some twelve months later Sir John Owen, a colonel in the king's service, forced his way into the castle with his men and took possession of it. A vigorous protest sent to the king having produced no result, the archbishop and his friends looked elsewhere for redress, and on the advance of Colonel Mytton with a parliamentary army in 1646 Williams joined forces with him. Together they retook the castle on the 10th November 1646, and the valuables within were returned to their respective owners.[1]

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[1] Patent Roll 2 Henry IV, 1401, Membs. 30, 24; Issue Roll 3 Henry IV; Cal. 283.

[2] Patent Roll 10 Henry V, 1422, Memb. 10 d.; Cal. Rot. Pat. 446.

[3] The *Cambrian Register* for the year 1795, p. 188.

The castle does not appear to have suffered much damage during the strife, but soon afterwards it was again abandoned. In 1665 the third Viscount Conway, who held the castle under royal grant, on the pretext of sending necessary supplies to Ireland for the king's campaign there gave orders that all the timber, iron, and lead should be taken out of the castle. This action called forth vigorous resistance from the leading men in the neighbourhood.[2] But their efforts were in vain, and the spoliation was carried out with such ruthlessness that at the end no timber, iron, or lead remained; even the timber supporting the roof of a small chamber was wrenched out. Of iron and lead there must have been many tons, for all the windows and loopholes were covered with a network of iron bars, and lead was used profusely throughout the castle.

From that time the castle has been subject to the usual effects of exposure and neglect: the walls are overgrown with ivy and other vegetation, and the cut stonework, where it has not been pulled out or destroyed, is in a decayed condition. Much damage was done during the early part of the nineteenth century, when stone for building purposes was dug and blasted out below the foundations; but since about 1880 slight repairs to doorways and fire-places have been carried out from time to time, and a stairway has been made by which the wall walk can be approached from the courtyard.

During the latter part of the eighteenth century and until 1877 the castle was held under royal grant by the marquis of Hertford for the time being, who let it out on lease at the annual rent of 6*s.* 8*d.* 'and a dish of fish to himself as often as he passed through the town'. In 1877 it passed into the possession of the borough council, and the mayor for the time being becomes ex-officio constable of the castle.

THE TOWN

The town is triangular on plan, with the castle at one angle of the base, towards the east, and a round tower at the other angle (fig. 1). At the apex, on the north, a curtain wall, formerly terminated by a round tower, runs into the river; and another wall, also ending in a tower, formerly ran into the river from the castle: the water between them, being protected by these walls, formed a safe harbour. The average thickness of the town walls is 5 ft. 7 in., but near the top they are corbelled out on the town side to allow of greater width for the wall walk; the average height to the wall walk is 24 ft. The curtain running into the river is 10 ft. 7 in. thick. Except on the river side the walls were protected by a ditch.

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[1] *Memoirs of Archbishop Williams*, by Bishop Hacket, 1715, pp. 218-20. Letter to Parliament by Thomas Mytton in *Notices of Archb. Williams*, by B. N. Beedham, pp. 68-9.

[2] Letter dated 6th Oct. 1665. *A Tour in Wales*, by Thomas Pennant, 1784, ii, 478.

Wall towers, generally open at the back, occur at frequent intervals, and numerous flights of steps run up to the wall walk beside the towers. The walk was carried all round on the tops of the walls except at the points where the town walls are joined to the walls of the castle. Here within a short distance from the castle, at both points, the walk comes abruptly to an end, and the wall itself, taking a slight bend, is reduced to about half its thickness before being carried up the steep rock to the castle. Towards the west of the town the walls on both sides rise rapidly up the hill to the round tower at the angle, which reaches the same height as the western towers of the castle (pl. XLIV, figs. 1 and 2).

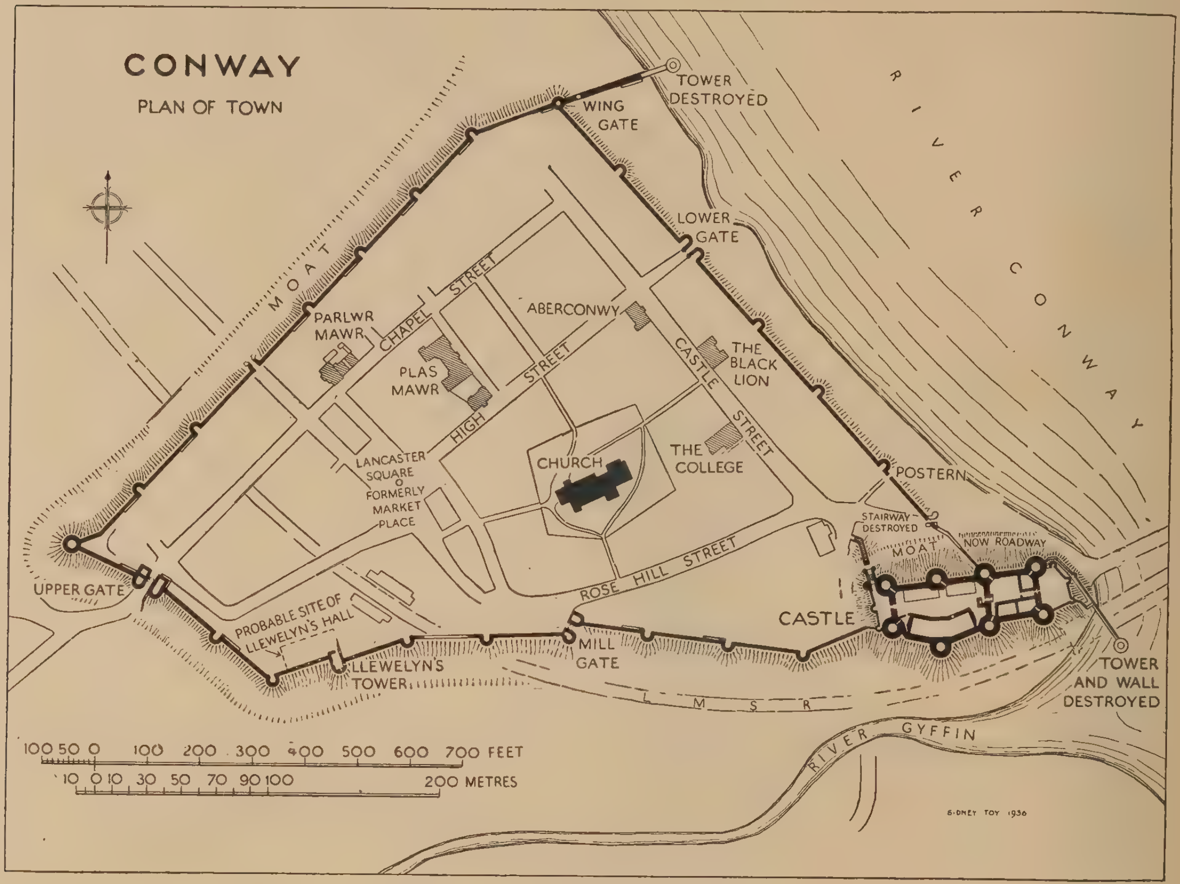
CONWAY
PLAN OF TOWN
TOWER DESTROYED
WING GATE
RIVER CONWAY
LOWER GATE
MOAT
PARLWR MAWR
CHAPEL STREET
ABERCONWY
PLAS MAWR
HIGH STREET
CASTLE STREET
THE BLACK LION
POSTERN
LANCASTER SQUARE FORMERLY MARKET PLACE
CHURCH
THE COLLEGE
STAIRWAY DESTROYED
NOW ROADWAY
MOAT
CASTLE
ROSE HILL STREET
UPPER GATE
PROBABLE SITE OF LLEWELYN'S HALL
MILL GATE
LLEWELYN'S TOWER
L M S R
TOWER AND WALL DESTROYED
RIVER GYFFIN
100 50 0 100 200 300 400 500 600 700 FEET
10 0 10 30 50 70 90 100 200 METRES
SIDNEY TOY 1936

Fig. 1. Plan of the town of Conway

There are three main gateways, all flanked by drum towers; the upper gate, lower gate, and mill gate, at the west, east, and south of the town respectively. All three are designed on similar defensive principles. A portcullis and two-leaved door behind it are placed so far within the gateway as to leave a long, unintercepted space in front—the enemy is invited to enter. But this space is commanded from above by a machicolation the full width of the gateway. There is a gateway, now widened and mutilated, in the wing wall at the north-east of the town; it also had a portcullis and machicolation; and, in the east wall near the castle, there is a small postern which was closed by a door only.

A portion of the town wall was built on taskwork in 1285; the cost, including the excavation of the ditch in front of that portion, being £472 10*s.* 4*d.* In the following year the mill gate with its flanking towers, and five wall towers with the intermediate panels of walling—probably the towers and walls between the mill gate and the upper gate—were all finished; the battlements here, as elsewhere in the town and castle, being covered with whitewash on completion.

The upper gate, where attack was most likely to occur, is the strongest of the gateways. Here, on the outside, there was an embattled platform immediately over the gateway between the drum towers, the platform being approached by a doorway in the south tower. The moat, which passed along outside the west wall, was spanned by a drawbridge, and there was a barbican, part of which still remains, beyond the moat; the moat itself has been filled in. An unusual defence occurs in the upper battlements. Two embrasures, facing each other over the gateway, are shielded on the outside by thin slabs of stone which project out from the merlons and protected the men firing or throwing missiles from the embrasures (pl. XLIV, fig. 3).

The mill gate received its name from the Giffin mill which stood outside the walls near it (pl. XLV, fig. 1). The gatehouse here belonged particularly to the king, and is referred to in the building accounts as the king's garderobe, and in later rolls as the king's house at the mill gate; the west tower is called, in the building accounts, the tower of the king's garderobe. Projecting out from the battlements of the curtain wall between this tower and that next west is a row of latrines which open on to the wall walk behind. It is probable that the king's building here extended westward from the gatehouse, for there was no doorway between the gatehouse and the wall walk on the west.

The lower gate, being in constant use, has suffered more from alterations and injury than the other two; but even here the main features of the gateway are preserved (pl. XLIV, fig. 4).

Within the walls the disposition of the streets remains probably much as it was as laid out in the thirteenth century, with the church, the sole relic of the abbey, standing in the middle of the town. Most of the old houses, however, have disappeared, though four or five of various periods still remain.

Aberconwy, a medieval house with a timber upper story, is the oldest. Plas Mawr was built in 1580, and Parlwr Mawr, said to have been the residence of Archbishop Williams, is of about the same period.

One house in the town, long since destroyed, must be noted. It was called the hall of Llewelyn. This building is first mentioned in an Exchequer Roll of 29 Edward I as being repaired in 1296.[1] Henry de Chester is paid thirty shillings for roofing and other repairs carried out on the hall. The same roll gives items for repairs on the building in 1297, 1299, and 1300; the hall of Llewelyn being grouped among works in the town, and kept distinct from works on the castle. In 1302, following the appointment of William de Sutton, justice of North Wales in the prince's service, some additions were made to the hall under the direction of the justice himself, and an Exchequer Roll of 1302–6[2] gives these operations in detail. The work was actually spread over five years, and was carried out intermittently with long intervals between the operations. The total cost for the whole period was £48 13*s.* 11*d.*, of which sum £19 15*s.* 1*d.* was spent on the chapel and £7 17*s.* 8½*d.* on the tower of the hall. The roll is endorsed by the statement that this account is allocated *in compoto camerarii de anno V^to^*, i.e. the fifth year of the principatus. In the chamberlain's account referred to occurs, under separate marginal heading, the item of £48 13*s.* 11*d.* for several years *operationes aulae Llewelini et camerarum ibidem in villa de Conewey.*[3]

It is not possible to say how long the house was in occupation after this period, but in 1316 orders were given to the chamberlain of North Wales 'to pull down the king's old hall in the town of Aberconewey, which is empty and yields no profit and to carry the timber of the same to the castle of Karnarvon and to cause a suitable house to be erected therewith within the castle to keep victuals in . . . as the king understands that a house is much needed for this purpose for the safety of the castle, and that the said hall would suffice if it were in the castle'.[4]

The work of demolition, transport, and rebuilding is given in detail in a Minister's roll of 1316.[5] The general contractor was John de Mere. After the hall was taken down the timber work was carried first to the king's house at the mill gate, from thence by sea to Caernarvon, and at Caernarvon it was set up within the castle with the necessary additional timbers and other material. The total cost for all works, including demolition, transport, and rebuilding, was £35 16*s.* 2½*d.* At Conway the hall was covered with shingles; as set up at Caernarvon it was roofed with slates.

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[1] Exchequer Accounts 29 Edw. I, 1301; E. 101. 486. 9.

[2] Exchequer Accounts E. 101. 486. 23.

[3] Ministers' Accounts S.C. 6. 1211/2.

[4] Close Roll 9 Edw. II, 1316, Memb. 17; Cal. Rot. Claus. 267.

[5] Ministers' Accounts 9 Edw. II, 1316; S.C. 6. 1211/7.

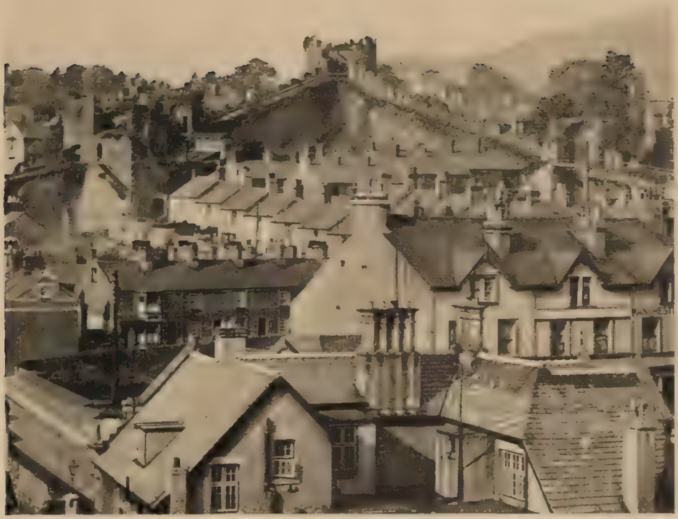

Fig. 1. Conway. The Town Walls. The West Corner Tower; the Upper Gate; and one of the Wall Towers from within

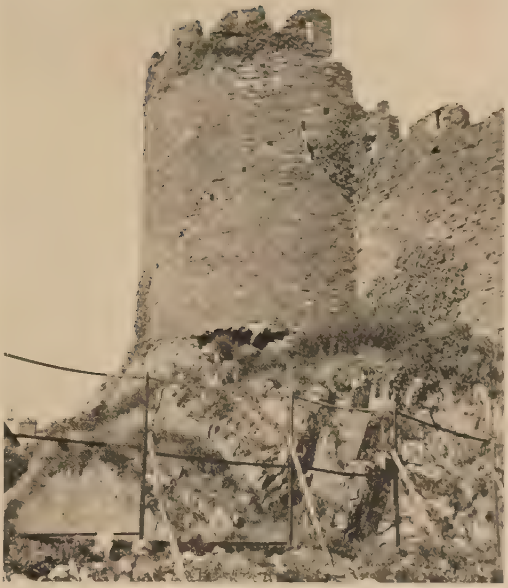

Fig. 2. Conway. The Town Walls. The West Corner Tower from without

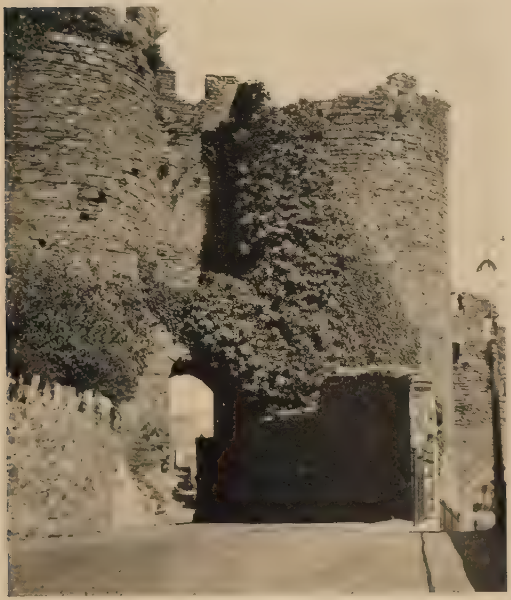

Fig. 3. Conway. The Upper Gate

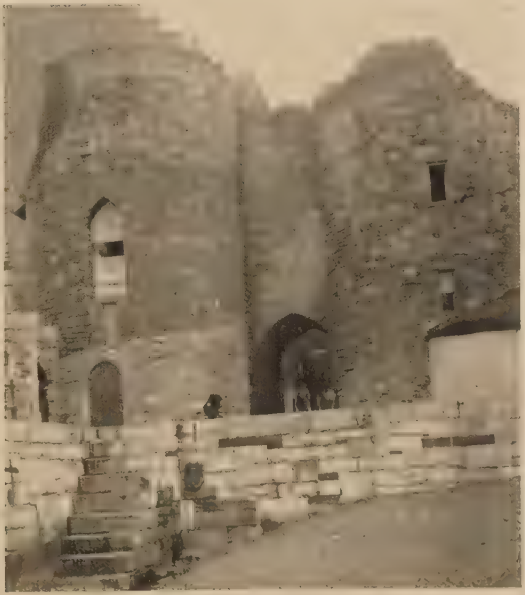

Fig. 4. Conway. The Lower Gate

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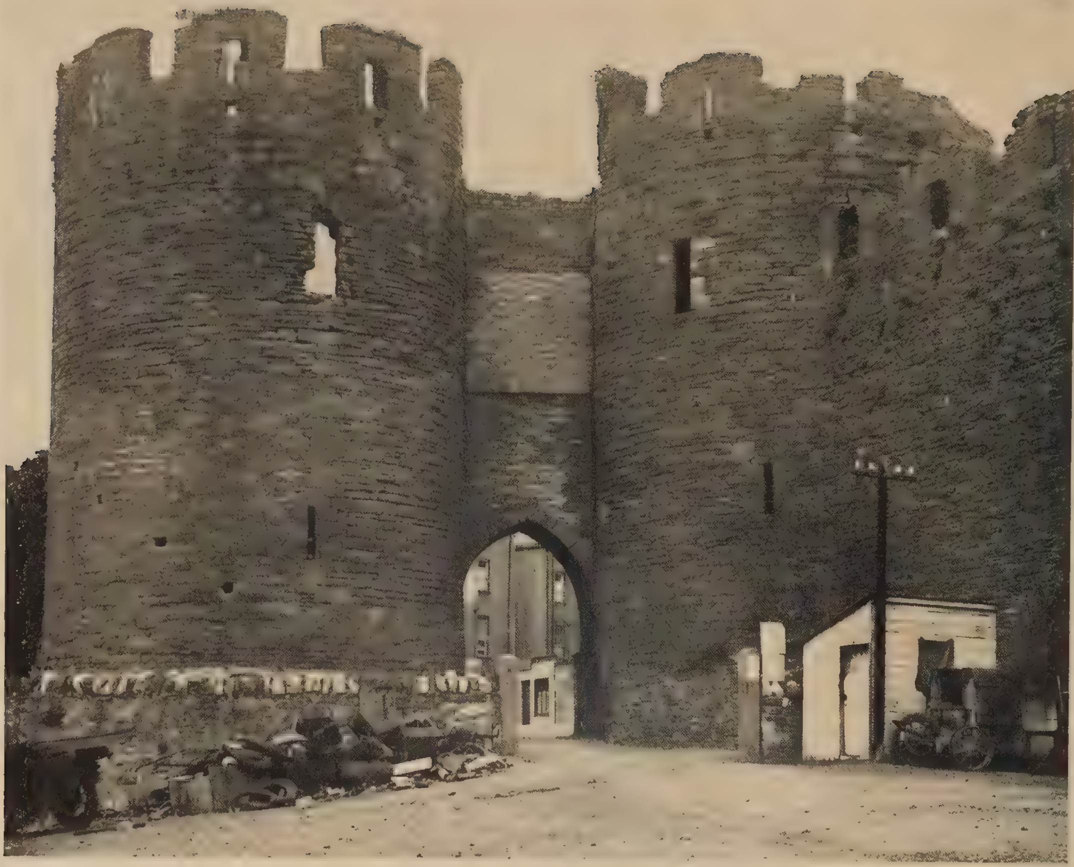

Fig. 1. Conway. The Mill Gate

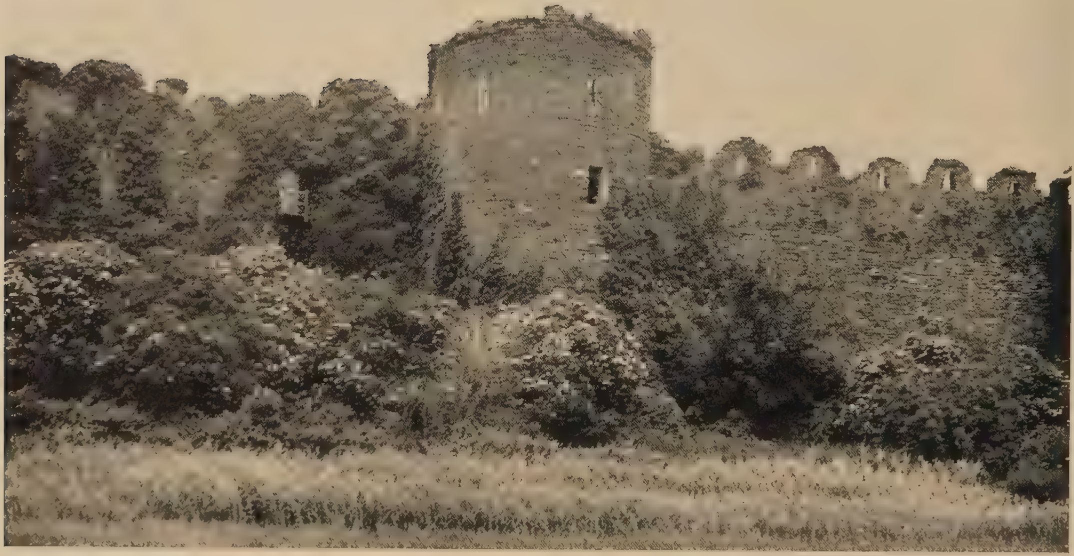

Fig. 2. Conway. Llewelyn Tower

Published by the Society of Antiquaries of London, 1937

From these accounts it is clear that the hall of Llewelyn was in the town of Conway, and that it was built largely of timber. Its site must be a matter of conjecture, but indications point strongly to that portion of the wall near the tower still called the tower of Llewelyn on the south side of the town (fig. 1 and pl. XLV, fig. 2). In 1286 a tower *versus le Giffin*, doubtless this tower, was enclosed with walls and a chamber formed in it. The curtain wall on the west side of the tower is not in line with that on the east side, but is set back 11 ft. 6 in. The wall on the west side is pierced by three windows, which are of the same period as the wall itself, and are set widely apart; they have stone seats, and were formerly defended by iron bars. There would be no purpose for such windows except to give light to a building behind them.

The chambers of the tower itself evidently formed part of a larger building. The principal room is on the first floor, and has windows with stone seats, and a large fire-place of dressed stonework, now much mutilated; the south side of the room is cut square into the curved wall of the tower. In the north wall is a doorway which now stands high above the ground, but formerly gave access to another room, now destroyed; and above it is an opening in the same wall, which was probably a doorway between the upper floor of the tower and that of the destroyed building. On the outside face of this wall are holes for floor and roof beams.

The destroyed building must have been as old as the curtain wall against which it stood. The hall of Llewelyn bears a name pointing to existence before the conquest of Wales, and its description in 1316 *in villa de Aberconewey est quedam vetus aula nostra vocata aula Lewelini*[1] also indicates an old building. It was probably built by Llewelyn, prince of Wales, and after the conquest used by Edward I before the castle was ready for occupation.

In concluding reference to the town, a word on the present condition of its walls and gateways may not be out of place; and here I would speak more particularly of the amount of untouched thirteenth-century work preserved. Modern arches have been formed in the walls here and there, and one tower on the north side of the town has been cut through. Two wide breaches have been made in the walls, one for the railway in 1848, and the other for a roadway in 1934. Some of the towers on the north side of the town are cracked, and the whole of the walls and gateways are in great need of careful attention. But despite these facts, and that destructive foliage has been allowed to grow profusely on the walls on the south side of the town, the fortifications here stand to-day, in general framework, much as they were left by the Edwardian builders. The medieval defences of Conway are among the most complete of those of any town in Europe.

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[1] Close Roll 9 Edw. II, 1316, Memb. 17; C. 54. 133.

The Castle

The castle is a long rectangular building defended by eight great towers, and divided into two baileys by a cross-wall. It stands on a high rock, having a gradual fall from west to east, and was protected on the east and south by the river Conway and the Gyffin respectively, and on the north and west, towards the town, by a deep moat. There is a gateway and a barbican at either end (pls. XLVI, XLVII, LV).

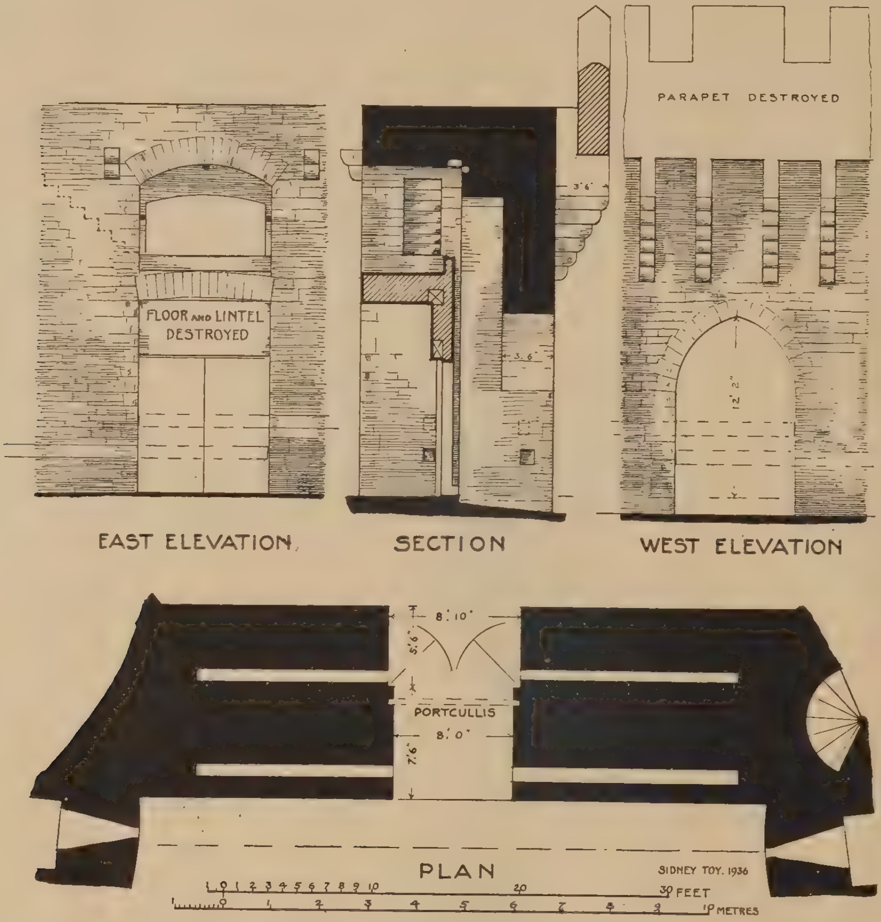

PARAPET DESTROYED
FLOOR AND LINTEL DESTROYED
3'6"
3'6"
12'2"
EAST ELEVATION
SECTION
WEST ELEVATION
8'10"
5'6"
PORTCULLIS
8'0"
7'6"
PLAN
SIDNEY TOY. 1936
0 1 2 3 4 5 6 7 8 9 10 20 30 FEET
0 1 2 3 4 5 6 7 8 9 10 METRES

Fig 2. Conway Castle. The West Gateway

Since attack was to be expected chiefly from the land side the west gateway and barbican were strongly guarded. Approach to the outer gateway was formerly by means of a long, steep stairway of masonry which took one turn in its course. The greater portion of the stairway was taken down in 1910, though a short piece, now a pillar of masonry next the gateway, was allowed to remain.

Entrance to the castle is now effected by a path which winds up the steep bank to an opening broken through the east wall of the outer gateway.

The outer gateway is flanked by towers, and was defended by a drawbridge over the moat and a portcullis; sockets for the great pivots on which the bridge turned still remain. Beyond the outer gate another stairway led up to a gateway at the entrance to the barbican; the whole approach being under direct fire from the outer gate and its flanking walls, from the roof over the upper gate—for it had a roof, which was probably embattled—and from the north-west tower of the castle. The barbican occupies a commanding position 53 ft. above the ground, and is defended on the west by battlements and bastions (pls. XLVIII, fig. 1, and LV).

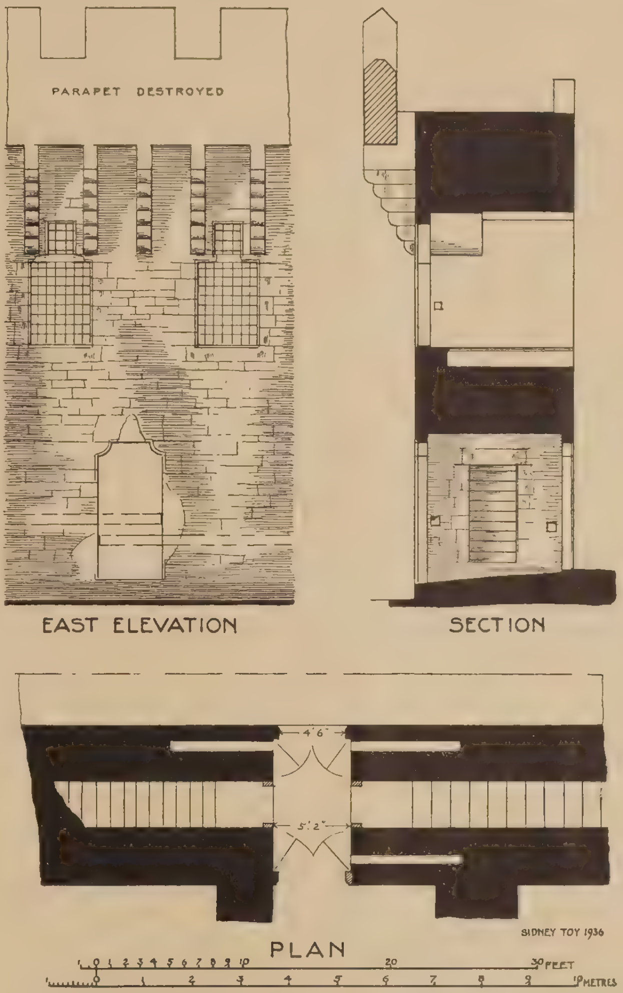


Fig. 3. Conway Castle. The East Gateway

The west gateway is at right angles to the line of approach (fig. 2 and pl. XLIX, fig. 1). It was defended from the outside from loop-holes in the adjoining towers and by a series of machicolations which projected out on corbels from the battlements above, and extended across the whole face of the west wall. The gateway itself was barred by a portcullis and a two-leaved door, and inside the portcullis it is of sufficient height to allow for the introduction of a floor 15 ft. above the passage. This floor, now destroyed, was reached by a flight of steps down from the wall walk, and formed a platform from which the portcullis could be operated, and the outer part of the gateway defended. The outer space was obstructed at will by two timber bars, arranged on different horizontal planes, and drawn out from long sockets, one from one side of the gateway and the other from the other side. The bars did not fit into sockets in the opposite wall in the usual manner, but stopped flush with the wall. The door was secured by two bars arranged in the same manner.

The east gateway was relatively weak (fig. 3). It was defended from the outside by a machicolated parapet, which extended across the face of the east wall, but there was no portcullis or other protection beyond two doors, one at the outer and the other at the inner face of the wall. The outer door was secured by two timber bars arranged in the same manner as at the west gateway. From within the gateway mural stairways led north and south to the adjoining towers.

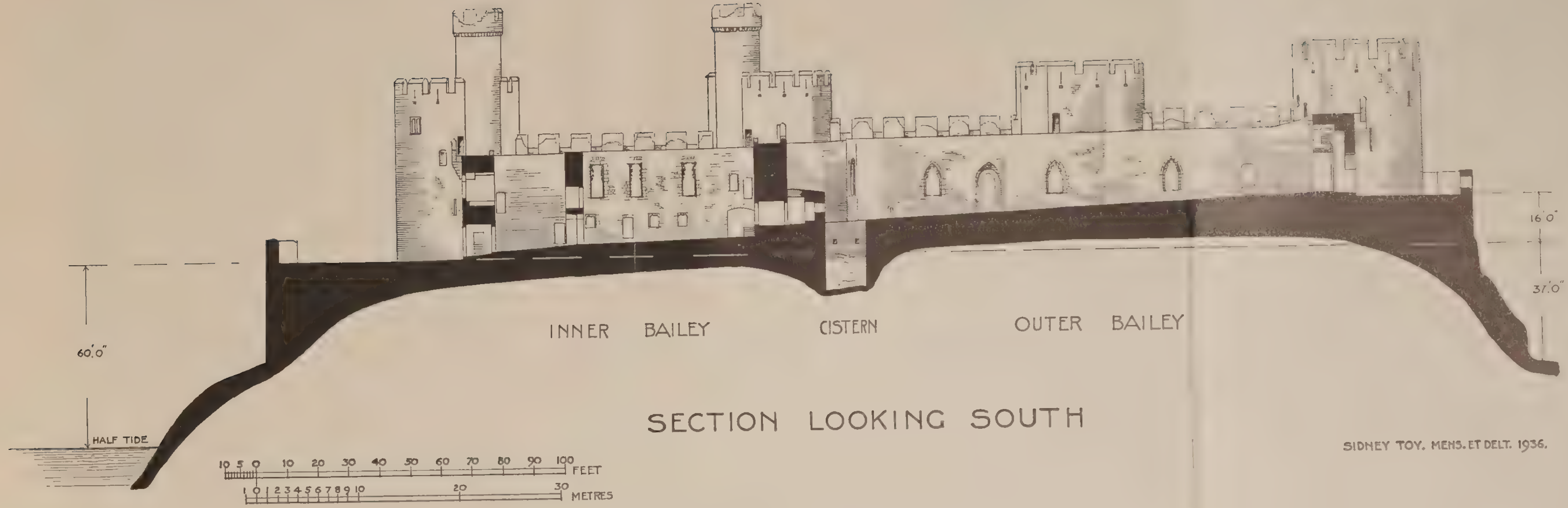
Approach to the east barbican was by means of a stairway cut in the rock and protected on both sides by screen walls (pl. LV). At some point between the walls, sufficiently near the sea to receive damage from it, there was a postern. The outer wall was protected by one small bastion and, running into the sea, terminated in a round tower. It was probably within the shelter of this wall that the king's boat, which was kept at Conway for passage over the river,[1] was moored when not in use. With the exception of the inner wall, a long piece of which still remains, the whole of this work has been destroyed. The tower was incomplete in 1343 and was perhaps never finished; it had disappeared by 1742, together with the postern and that portion of the wall from the bastion outward.[2] The wall, which was built in 1286, was apparently difficult to maintain. Having been damaged by heavy seas it was under repair in 1316, together with the adjacent postern, and a portion of it was again ruinous in 1343. The bastion and the whole of the wall north of it were swept away in 1822 when the suspension-bridge was built.

The stairway, for the whole of its length from the postern to the head, was under direct command from the east barbican, which towered above it. At its head it was under fire from the north-east tower and more particularly from a large opening in the tower immediately above the steps. It is not clear what kind of gate, if any, there was at the entrance to the barbican. The east barbican was called the garden in 1316. It is similarly defended by a parapet and bastions, but is more spacious than the west barbican.

The eight great towers closely resemble each other in construction and design. They have each a ground-floor and two upper floors, the tower next the great hall and that at the south-east of the castle having each a basement in addition. They are all entered directly from the courtyard or from rooms on a level with the courtyard, and in most cases a newel stairway from the entrance passage leads directly to the upper floors and battlements, and to the wall walk on the curtain. Most of the steps of these stairways have been destroyed. In the four eastern towers the stairways are continued up into round turrets, which rise high above the roofs of the towers and are themselves

[1] Close Roll 18 Edw. II, 1325, Memb. 1; Cal. Rot. Claus. 304.

[2] They are not shown in the drawings by S. and N. Buck, dated 1742.


60'0"
HALF TIDE
INNER BAILEY
CISTERN
OUTER BAILEY
16'0"
31'0"
SECTION LOOKING SOUTH
10 5 0 10 20 30 40 50 60 70 80 90 100 FEET
1 0 1 2 3 4 5 6 7 8 9 10 20 30 METRES
SIDNEY TOY. MENS. ET DELT. 1936.

CONWAY CASTLE: SECTION LOOKING SOUTH

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embattled. Probably it was at first proposed to have similar turrets on the four western towers also, and provision was made for the base of a turret in the second tower from the west on the north side. But the proposal was abandoned, and the battlements of these towers were continued round the heads of the stairways (pl. XLVII).

The tower at the south-west of the inner bailey, called the broken tower, stood for many years in a mutilated condition until it was restored in 1881. At some period, probably in the early part of the eighteenth century, a large portion of the outer half of the tower fell down, leaving the upper part overhanging towards the river. The fall is said to have been due to undermining the rock beneath the castle for building-stone. So strong was the masonry of which the tower was built that not only did the upper part hold firm, poised fifty feet above the ground, for so long a time, but a complete section with both inside and outside faces, which had fallen whole, remained intact until it was eventually broken up by force (pls. XLVII, fig. 2, and LV).

The two western towers were designed primarily for the defence of the gateway and the accommodation of its guards. In each tower there is a long loophole which commands not only the gateway but its approaches; together they sweep the whole of the west barbican. Pl. XLIX, fig. 4, shows the south tower with one of these loopholes and a portion of the parapet of the west curtain. On the first floor of this tower there is a large mural chamber which appears to have been a dormitory and has a garderobe at the far end. The roof over this chamber was composed of large beams placed close together. These beams have been pulled out, but the masonry which was placed upon them has held firm and remains as a flat ceiling. From the triangular space outside the tower steps led up to a large triple garderobe which projects out from the curtain wall. The steps have been destroyed and the entrance to the garderobe blocked by a modern stairway to the wall walk (fig. 4).

The tower on the north side of the gateway is the largest in the castle. Here the newel stairway from the lower entrance comes to an end at the first floor, and from this level a short passage and another stairway lead to the upper floor and the battlements. Opening from the second stairway is a passage to a mural chamber and garderobe. The roof of this chamber is composed of flat stone slabs, gathered in towards the centre in layers one above the other, and in the centre is a square ventilating shaft. The shoot of the garderobe is blocked by a semicircular pillar of masonry, of later date, built against the wall outside (fig. 4).

Generally the first and second floors in all the towers have each a fireplace and a two-light window in addition to one or two firing-loopholes; garderobes open either from the jambs of one of the loopholes or from the newel stairway outside. All the floors and roofs have been destroyed, but their construction is obvious. The floors were composed of beams about 13 in. square placed close together and either built into the walls at the ends or resting upon offsets; struts rising from corbels gave additional support. A paving of thin slabs of stone, portions of which still remain, was laid over the timber. The roofs were of similar construction, without the paving and with the additional

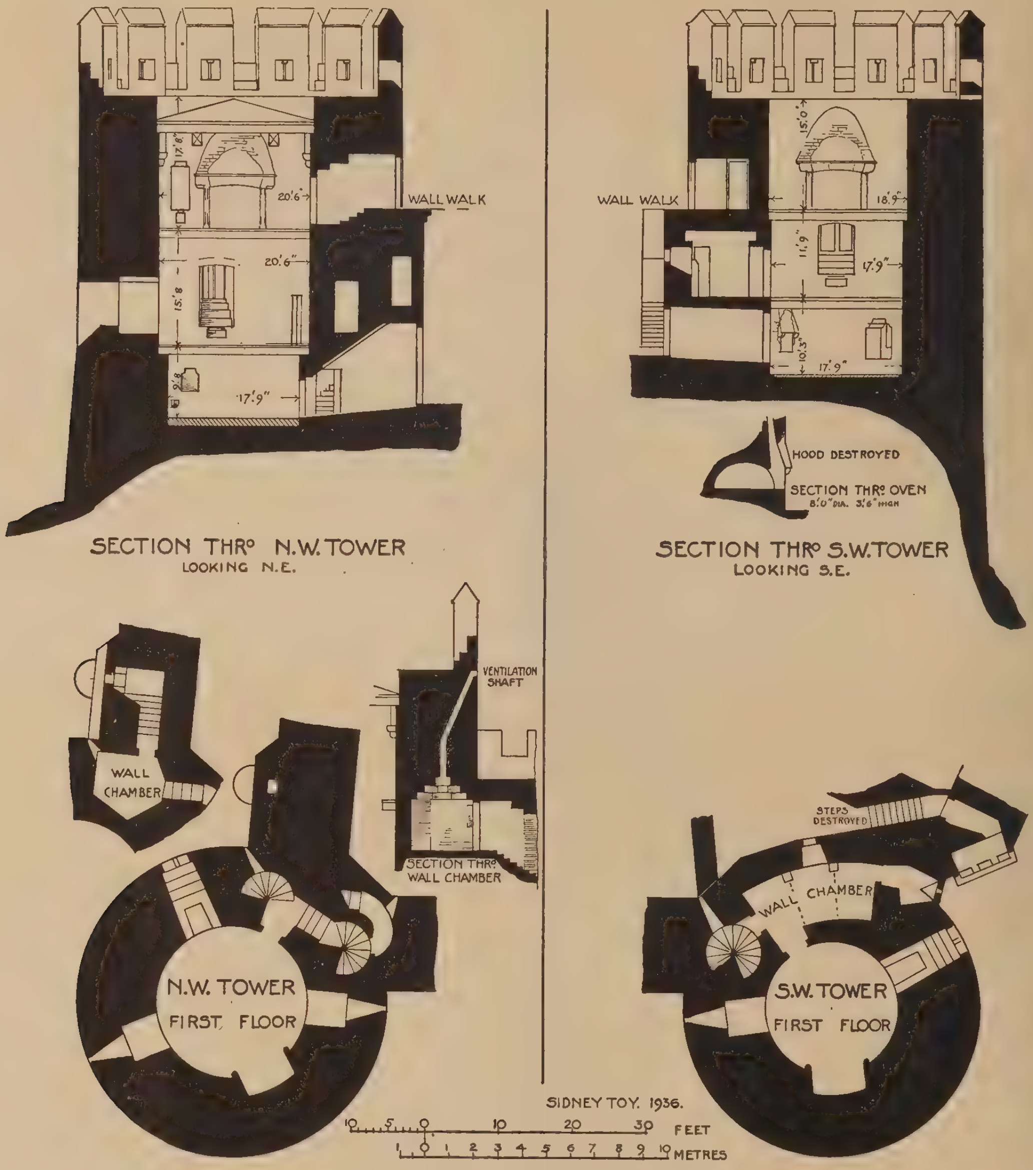
17.'8"
20.'6"
WALL WALK
20.'6"
15.'8
9.'8
17.'9"
SECTION THRº N.W. TOWER
LOOKING N.E.
15.'0"
WALL WALK
18.'9"
11.'9"
17.'9"
10.'3"
17.'9"
HOOD DESTROYED
SECTION THRº OVEN
8.'0" DIA. 3.'6" HIGH
SECTION THRº S.W. TOWER
LOOKING S.E.
VENTILATION SHAFT
WALL CHAMBER
SECTION THRº WALL CHAMBER
N.W. TOWER
FIRST FLOOR
STEPS DESTROYED
WALL CHAMBER
S.W. TOWER
FIRST FLOOR
SIDNEY TOY. 1936.
10 5 0 10 20 30 FEET
1 0 1 2 3 4 5 6 7 8 9 10 METRES

Fig. 4. Conway Castle. The West Towers

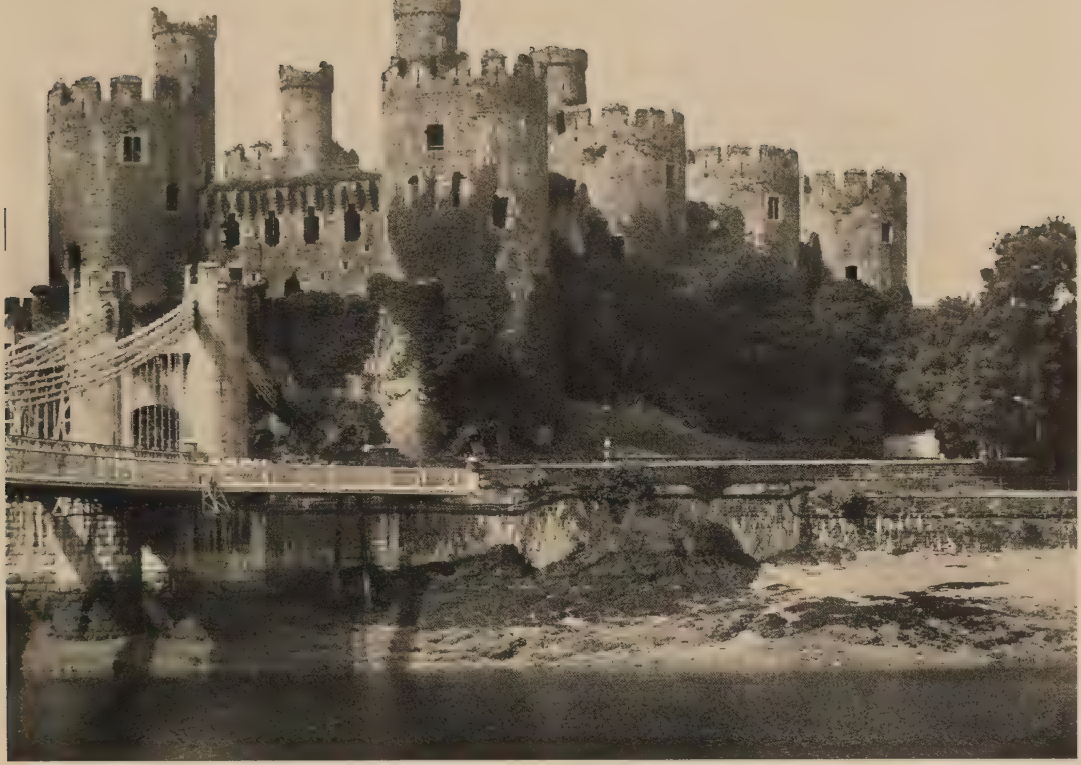

Fig. 1. Conway Castle from the north-east

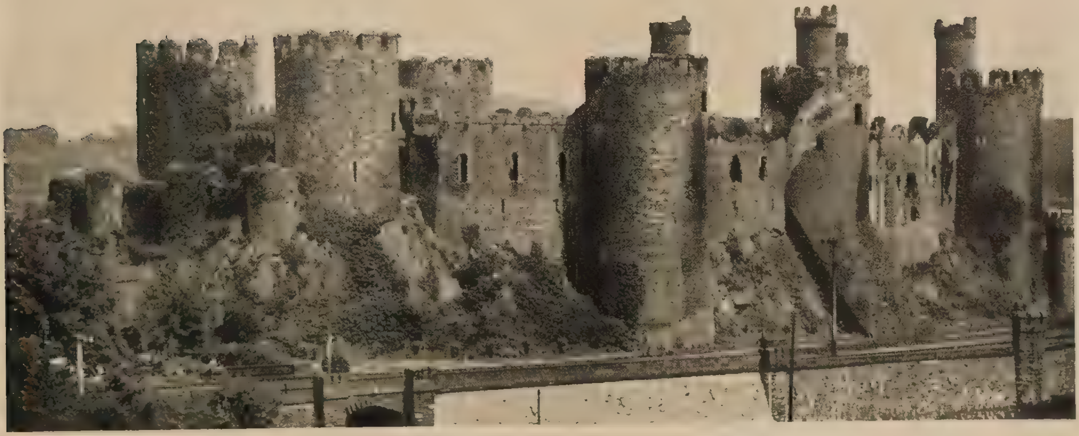

Fig. 2. Conway Castle from the south-west

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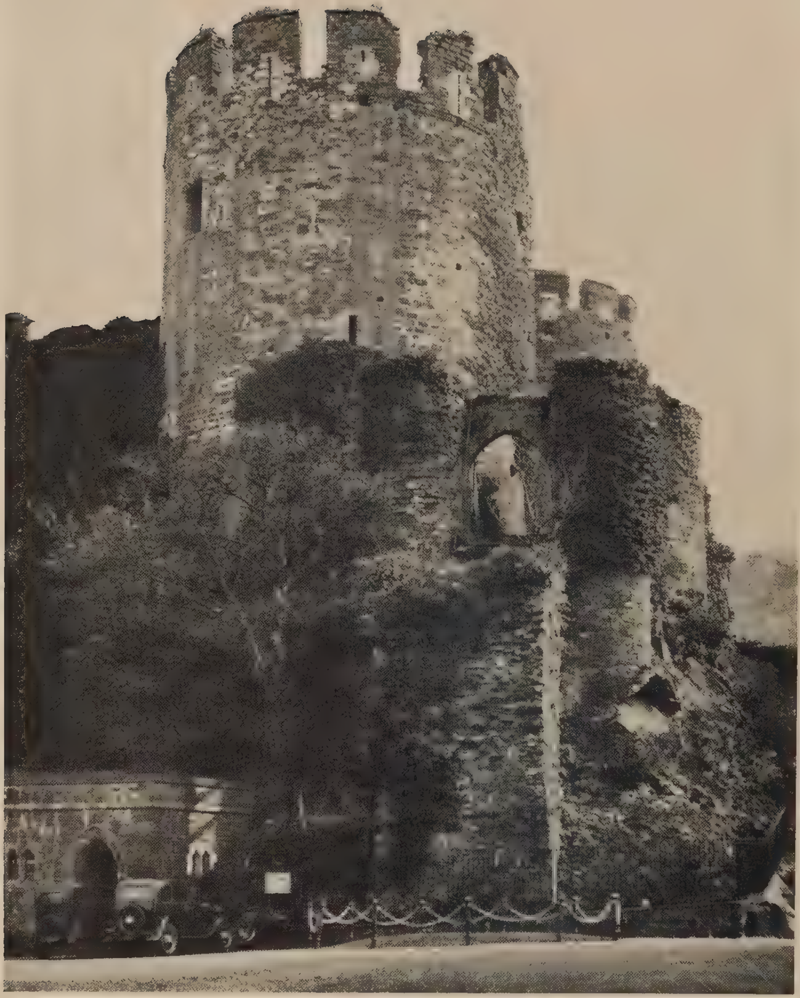

Fig. 1. Conway Castle. The Outer Gateway and West Towers

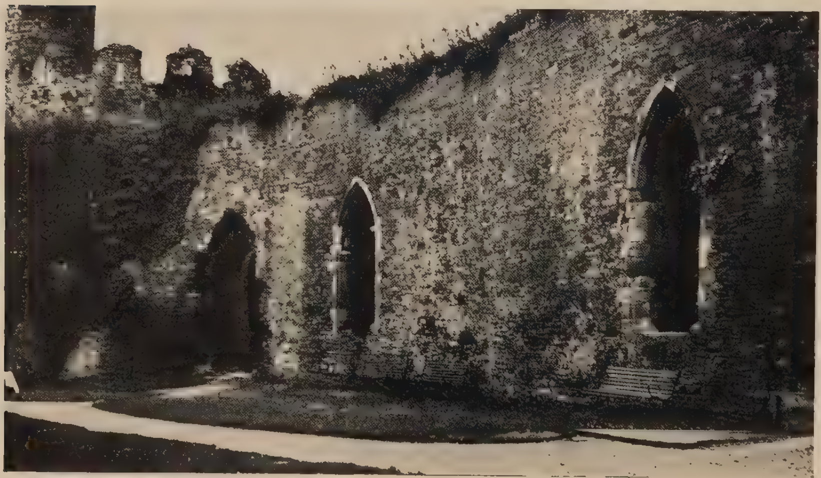

Fig. 2. Conway Castle. The Great Hall from the Courtyard

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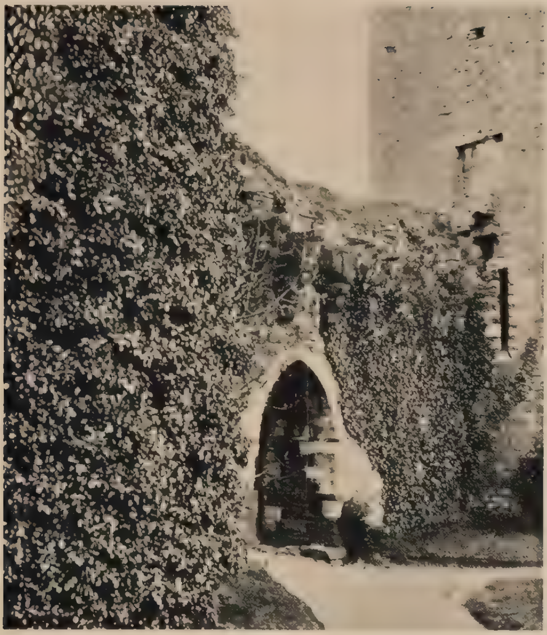

Fig. 1. Conway Castle. The West Gateway

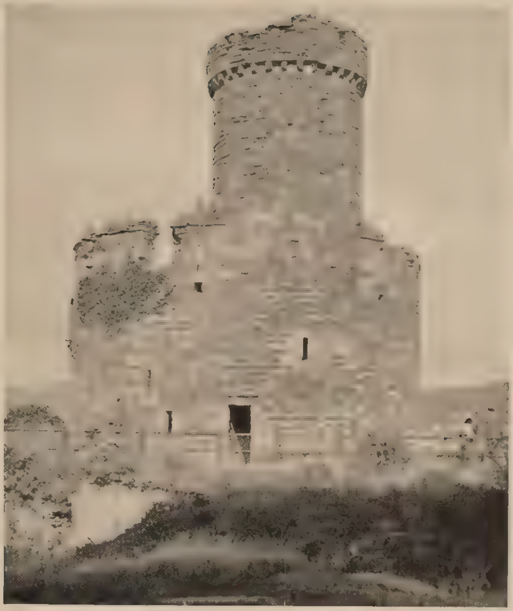

Fig. 2. Conway Castle. The North-East Tower from the Wall Walk

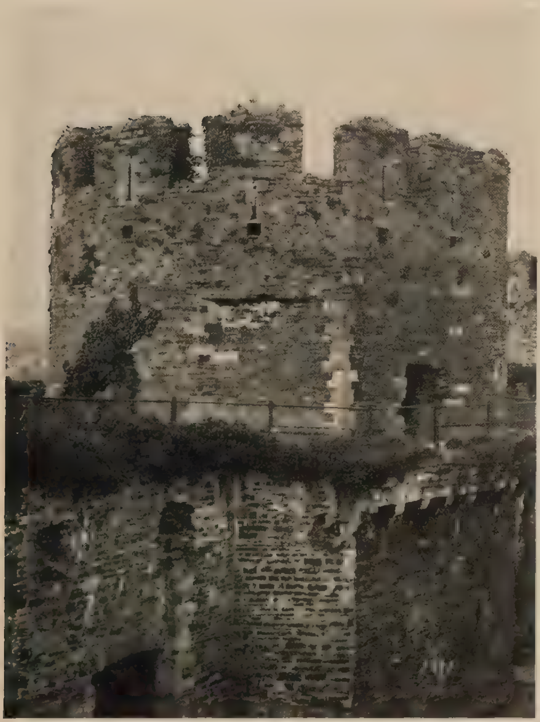

Fig. 3. Conway Castle. North Tower of Outer Bailey. Holes for beams of hourding, a gargoyle, and corbels for roof-beams of stables are seen in the walls

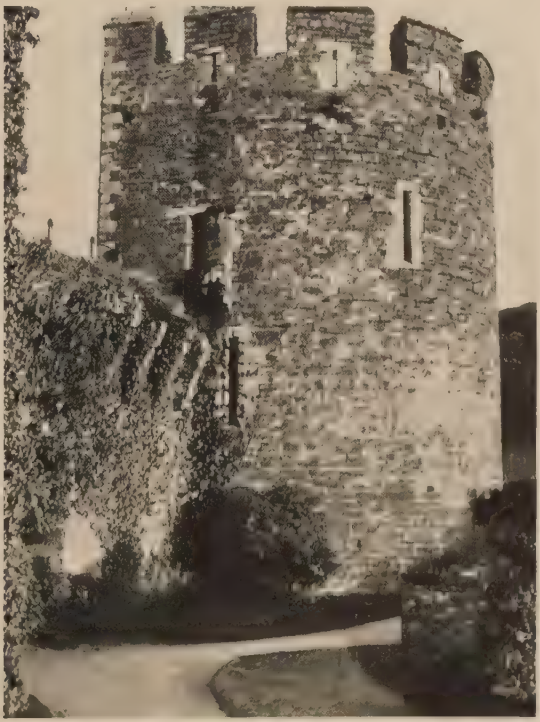

Fig. 4. Conway Castle. The South-West Tower

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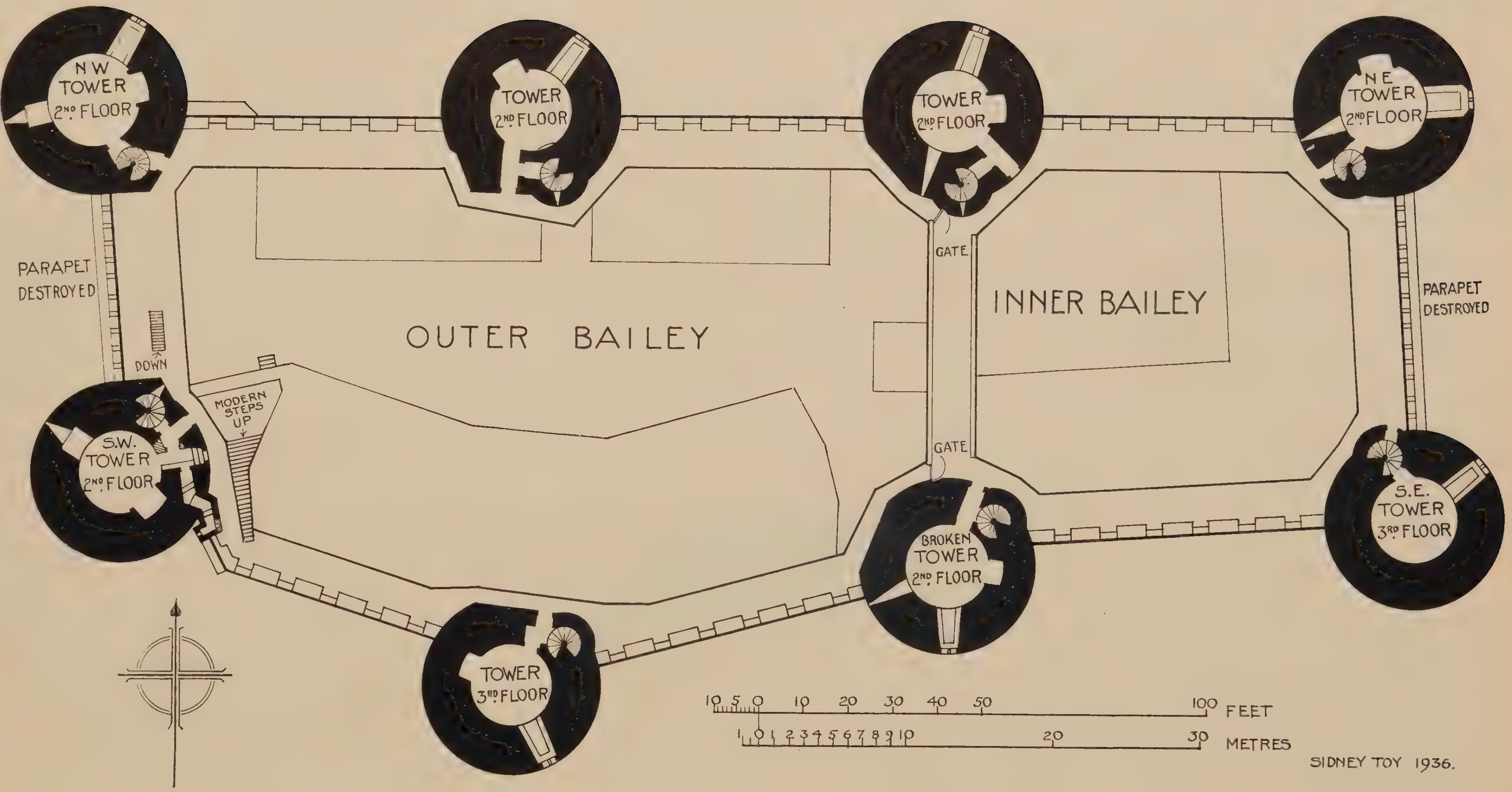
N W
TOWER
2ND FLOOR
TOWER
2ND FLOOR
TOWER
2ND FLOOR
N E
TOWER
2ND FLOOR
PARAPET
DESTROYED
GATE
INNER BAILEY
PARAPET
DESTROYED
OUTER BAILEY
DOWN
MODERN
STEPS
UP
S.W.
TOWER
2ND FLOOR
GATE
S.E.
TOWER
3RD FLOOR
BROKEN
TOWER
2ND FLOOR
TOWER
3RD FLOOR
10 5 0 10 20 30 40 50 100 FEET
1 0 1 2 3 4 5 6 7 8 9 10 20 30 METRES
SIDNEY TOY 1936.

CONWAY CASTLE: PLAN AT LEVEL OF WALL WALK

Published by the Society of Antiquaries of London, 1937

support of two powerful cross-beams. They were probably covered with lead as were the walks behind the battlements, and to judge from the rain-water drains their centres rose but little above the level of the walks.

The battlements of all the towers are pierced with loopholes which are alternately at high and low levels. Below the loopholes, adjusted to a level line round each tower, is a series of holes 10 in. square; and, arranged at convenient positions on the sides of the towers facing outwards, are gargoyles for draining off the rain-water from the roofs. Except in rare instances the holes are distinct from the gargoyles and in places do not even pierce the parapet. They were doubtless for the beams of brattices or hourds—timber galleries built outside the battlements in time of assault. Projecting here and there above the parapets are the remains of stone pinnacles which were perhaps carved but are now too much weather-worn and broken to indicate their original form (pl. XLIX, figs. 2, 3, and 4).

The wall walk, now reached by the modern stairway at the south-west, was originally approached by way of the stairways in the towers. Once gained, the walk is continuous all round the curtain and on the cross wall, and, where it passes round the towers, the necessary width is obtained by means of corbels projected out from the wall below. A doorway in each tower gives direct access from the walk to the chamber in the tower at that level and to the newel stairway. The only obstructions offered in the whole circuit were two gates which were thrown across the walk at the west end of the cross wall, one on the north and the other on the south. But whether these gates had any military value or were erected merely for the purpose of giving seclusion to the occupants of the inner bailey there is insufficient evidence to show. The recesses in the walls of the towers against which the gates were closed are now the only vestiges of them: the gates themselves have disappeared long since. The parapet, now much broken away, has embrasures spaced about 6 ft. 6 in. apart, but there are no loopholes. The whole wall walk was covered with lead, grooves for the flashing being cut in the parapets all round (pls. XLVI, L, and LI, fig. 1).

The outer bailey is about twice the size of the inner bailey. Its buildings had become ruinous by 1343, and the survey of that date, which mentions only those parts of the castle needing repair, deals largely with the outer bailey and six of the great towers, probably those surrounding this bailey. The king's hall in the inner bailey and the other two towers, all forming the residential quarters, must have been kept in repair and are not included in the dilapidations. The portion of the roll concerned with the structure of the castle is as follows: the jury found

> quod magna aula regis in castro predicto una cum celario sub eadem aula sunt ita debiles et ruinosae propter vetustatem maeremii putridi et per defectus cooperaturae

plumbi quod non possunt minus reparari quam pro clx li. videlicet in cementario et operationibus cementarii c li. et in maeremio et operationibus carpentarii xx li. et in plumbo et alio necessario xl li. Et quod coquina bracina et pistrina sub uno tecto sunt debiles et ruinosae et maeremium earundem in parte putrifactum per defectus emendationis et coopertura qualis reparatio estimatur ad lx li. Item quod fons tractabilis de ballio inferiore est debilis et ruinosus et potest reparari per estimationem pro xxx s. Et quod turris extra posternam dicti castri que stat in magnam salvationem ejusdem castri et que incepta est et non perfecta potest perfici per estimationem pro lx li. Et quod quedam domus vocata le Gerner est ruinosa per defectum cooperturae et per estimationem potest cooperari et emendari pro c s. Item quod tecta et arrecta decem et octo camerarum in sex turribus dicti castri sunt debilia et ruinosa propter putrifactionem maeremii et per defectus emendationis et cooperturae que non possunt minus reparari per estimationem quam pro cxxxj li. videlicet in cementario et in operationibus cementarii lxx li. et in maeremio et operationibus carpentarii xxx li. in emptionibus plumbi et aliis necessariis et stipendiis operatorum xxxj li. Et etiam quod fons tractabilis in castro predicto potest reparari pro xl s. et quod murus cujusdam portae juxta posternam est ruinosus et potest reparari et emendari pro x ls. Et quod stabulum in eodem castro est debile et ruinosum et potest reparari et emendari per estimationem pro iiij li.[1] [Total sum estimated necessary for repairs £425 10*s.*]

On the north side of the bailey are traces of two ranges of buildings, that on the west probably having been the stables, and that on the east the kitchen, brewhouse, and bakehouse (pl. LV). These buildings covered the loopholes in the curtain on that side. Of the stables the only vestiges are the corbels and holes for the roof-timbers (pl. XLIX, fig. 3). The other range has also been destroyed except for fragments of the end and partition walls, which project out from the curtain, and for a portion of vaulting in the east section of the range. There is no trace of the kitchen fire-places, which must have been in the internal walls. In the south-west tower there is a large oven for the use of the outer bailey.

The castle well, *fons tractabilis*, is on the south-east of the kitchen range and is actually a large reservoir, dug down through the soil into the rock beneath and fed by water conveyed to it by pipes. R. Williams in 1835 wrote: 'the water supplying it is traditionally reported to have been conveyed in pipes from a well above Ty gwyn. I have heard it said that portions of pipes have been met with when plowing fields in the neighbourhood, and tradition also records that the enemy, by discovering these pipes, at one time forced the garrison to surrender.'[2] The well is 12 ft. across and 22 ft. deep, and is lined with brickwork. Water entered by channels on the south side, and the overflow was conducted to a loophole in the north wall and discharged into the moat. The well was enlarged or repaired in 1307, and in 1316 the surrounding wall was raised and a well-house built over it.[1]

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[1] Exch. K.R. misc. E. 163. 4/42.

[2] *The History and Antiquities of the Town of Conway*, by Rev. Robert Williams, 1835, pp. 77–8.

The great hall is on the south side of the bailey, and, following the contour of the curtain, bends twice in its length from east to west (fig. 5 and pls. LII and LV). It was first mentioned in 1286, when it appears as a completed structure in which some minor repairs are being made and a wood panel or screen is being erected.[2] The hall is 37 ft. 7 in. wide and 126 ft. long between extreme points. The cellar runs the whole length but, except for a portion at the east end, is only half the width of the hall. At the east end it is extended to the full width of the hall, and this portion was screened off from the rest by a partition wall with a doorway. The wall is destroyed, but a portion of the door-jamb still remains. The cellar was entered from the west end by a flight of steps down from the courtyard to a pointed doorway. In the south wall are five loopholes, which are spaced without relationship either to the south windows or to the internal walls of the hall above, and when the hall was built its east wall abutted across one of these loopholes.

The internal walls of the great hall, as of those of other buildings within the castle, were constructed independently of, and subsequent to, the lower parts of the main walls. Fortification was the immediate concern, and the building of the curtain walls and towers must have been hastened and the work well advanced before the design of the living-quarters had been definitely settled. The result is that the internal walls abut awkwardly against the jambs of the outside loopholes—as here.

The hall itself is entered directly from the courtyard by a pointed doorway, the dressings of which have been destroyed, in the north wall. There are four windows in the inner walls to the courtyard and six in the curtain wall on the south; all have stone seats. A doorway in one of the south windows leads to the tower adjoining the hall, with a newel stairway descending to the first story and rising to the battlements. The first story has no fire-place and was lighted by a loophole only; its floor was 5 ft. 6 in. below the doorway and was probably reached by a short ladder. The basement below must have been a prison, entered by a trap door in this floor and receiving its light and air through a small square hole high in the wall on the south. The upper storeys of the tower are similar to those already described.

The hall has three fire-places, one each in the north, south, and west walls. The north fire-place, being the most accessible, has been despoiled of all its dressings. That on the south, which is the largest, is 8 ft. 6 in. wide. Its jambs have double splays and bases, and at the head are corbelled forward to

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[1] Exchequer Accounts E. 101. 486. 24; and Ministers' Accounts S.C. 6. 1211/7.

[2] Exchequer Accounts E. 101. 485. 28.

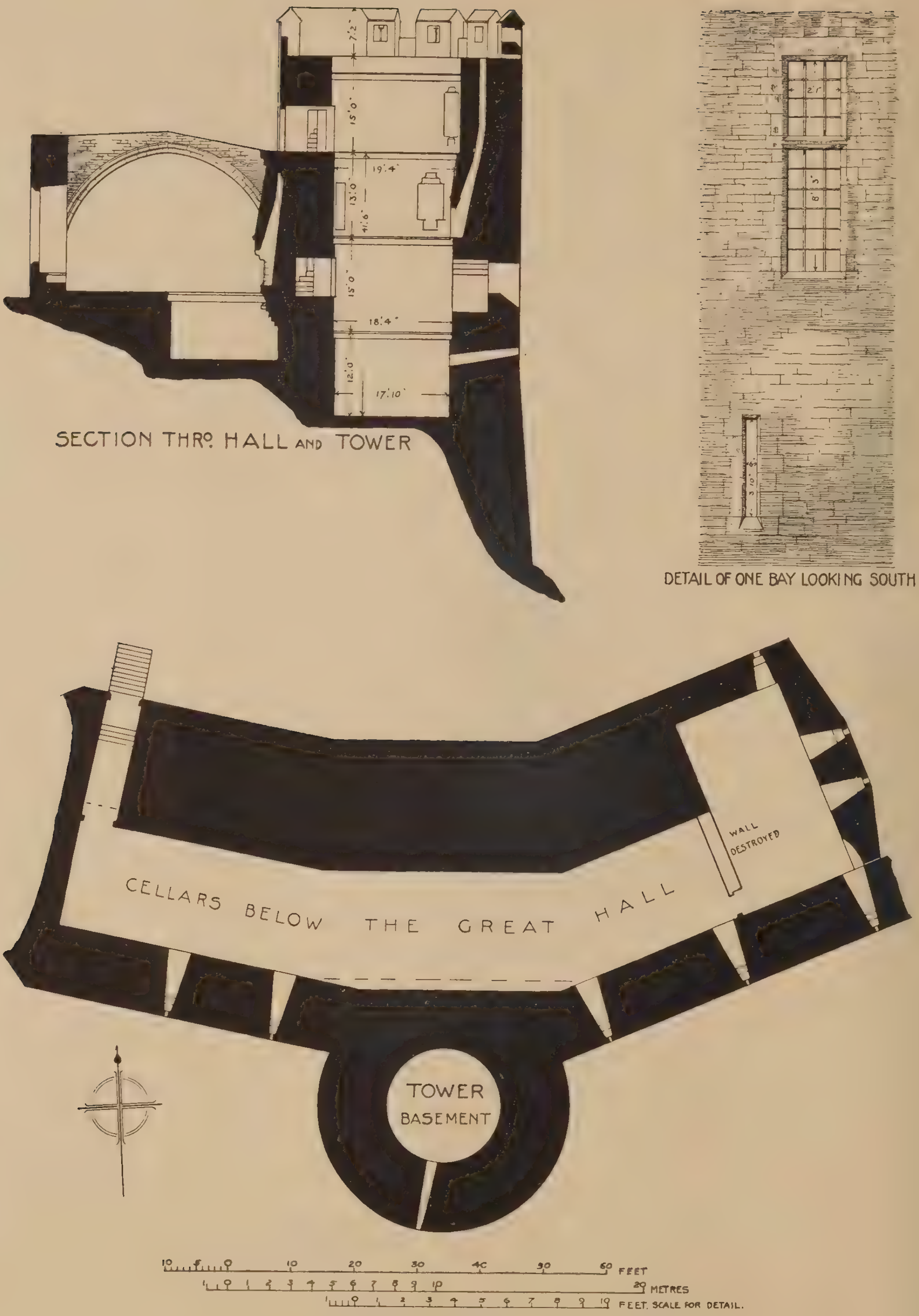
7'2"
15'0"
19'.4"
13'0"
41'6"
15'0"
18'.4"
12'0"
17'.10"
SECTION THRO. HALL AND TOWER
2'1"
8'5"
3'10"
DETAIL OF ONE BAY LOOKING SOUTH
WALL DESTROYED
CELLARS BELOW THE GREAT HALL
TOWER BASEMENT
10 0 10 20 30 40 50 60 FEET
1 0 1 2 3 4 5 6 7 8 9 10 20 METRES
1 0 1 2 3 4 5 6 7 8 9 10 FEET. SCALE FOR DETAIL.

Fig. 5. Conway Castle. The Great Hall

support the hood. On either side are brackets with moulded corbels, which were probably for the support of lamps. The lintel and a portion of the hood are broken away. The west fire-place is of similar design, but its brackets, now much weather-worn, were more richly moulded (pl. LII, fig. 2).

The roof over the great hall was covered with lead and was supported on eight stone arches, spaced at varied intervals in its length. At the beginning of the nineteenth century six of these arches still existed; now all have fallen down save one, the second from the east, and that one was rebuilt in 1923. Fragments of the others still project from the walls on either side. Below the north springers of the first and second arches from the east are vestiges of what appear to have been brackets, one 8 ft. and the other 5 ft. above the hall-floor. The windows on the south side of the hall, now much mutilated, were all square-headed single lights with transoms, and were protected by iron bars and stanchions (fig. 5).

Writing about 1780, Francis Grose says that this hall was known locally as a church,[1] a name given probably on account of its traceried windows towards the courtyard (pl. XLVIII, fig. 2). Later, the eastern end of the hall was called a chapel, a partition across the hall at this end and a piscina in the east window being suggested. There is, however, no trace of a piscina in the east window or of any partition at that end of the hall, though probably there was a wooden screen west of the doorway. The early accounts of the hall and the structure itself suggest a purely domestic use throughout.

The three windows in the north wall are alike, and were each of two lights in a pointed head; the east window was of three lights in a round head. The mullions and large portions of the tracery of these windows have been destroyed, but sufficient tracery remains to indicate the designs of all of them. Those in the north wall were each of two trefoiled lights with a quatrefoil in the head. Pl. LI, fig. 2 shows one of these windows, that immediately west of the doorway. The completed window is shown in fig. 6. The east window, though it has a round head, is of the same date and character as the others; it was of three trefoiled lights with a trefoil at the head of each light. Pl. LI, fig. 3 shows the window as it is at present, and fig. 7 the completed window. Here the sub-orders of the tracery are stepped back from the inside, but not from the outside, and it is clear that this window was designed mainly for internal effect.

It is probable that the great hall has been neglected since the time of Edward I, and from that time has fallen gradually from disrepair to ruin. The repairs undertaken by Edward II were concerned with other parts of the castle, and the condition of the structure in 1343 would suggest that the money spent on the castle by Edward III was also laid out elsewhere. In 1343 the hall was found to be so ruinous that the cost of its repair was estimated at £160. Four years later works on the castle were carried out by orders of the Black Prince. But there is no evidence in the building itself that the great hall was reconditioned either at that or any subsequent period. From the first the hall must have proved inconvenient, costly to maintain, and of a size far too great for the requirements of the castle.

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[1] *Antiquities of England and Wales*, by Francis Grose, 1784, vol. iv.

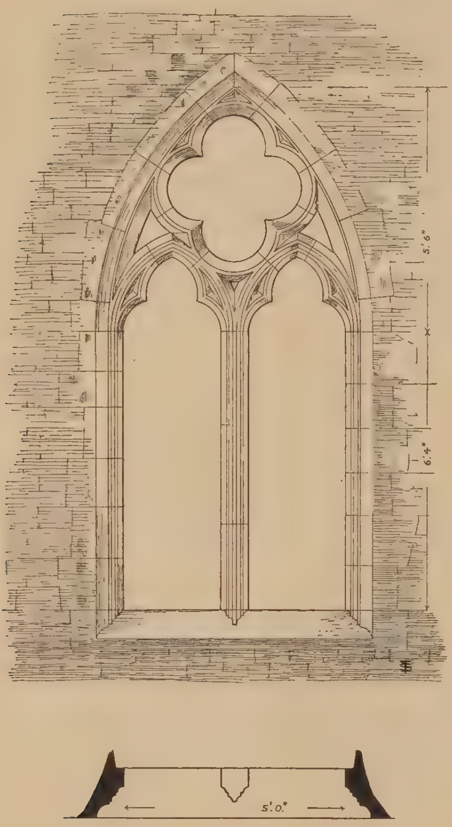

Fig. 6. North Windows of the Great Hall, as complete

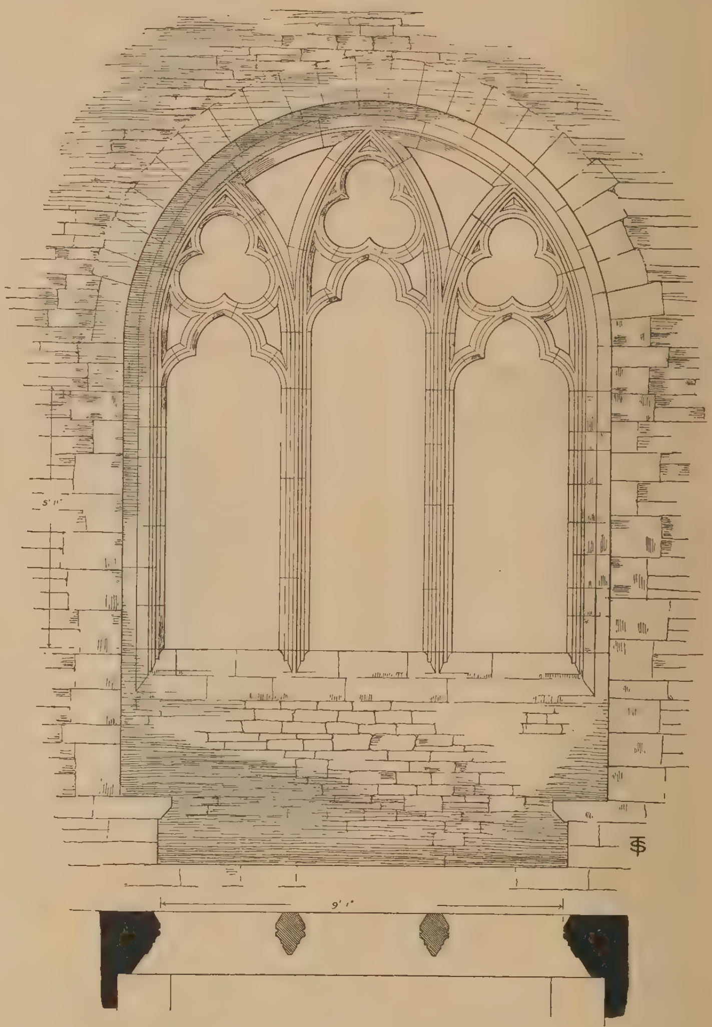

Fig. 7. East Window of the Great Hall, as complete

The gateway between the two baileys is entered from the west through a small guard-chamber which projects into the outer bailey and has a loop-hole commanding the whole length of that bailey. There were two doors in the passage through the wall. On the east side the gateway stands about 4 ft. above

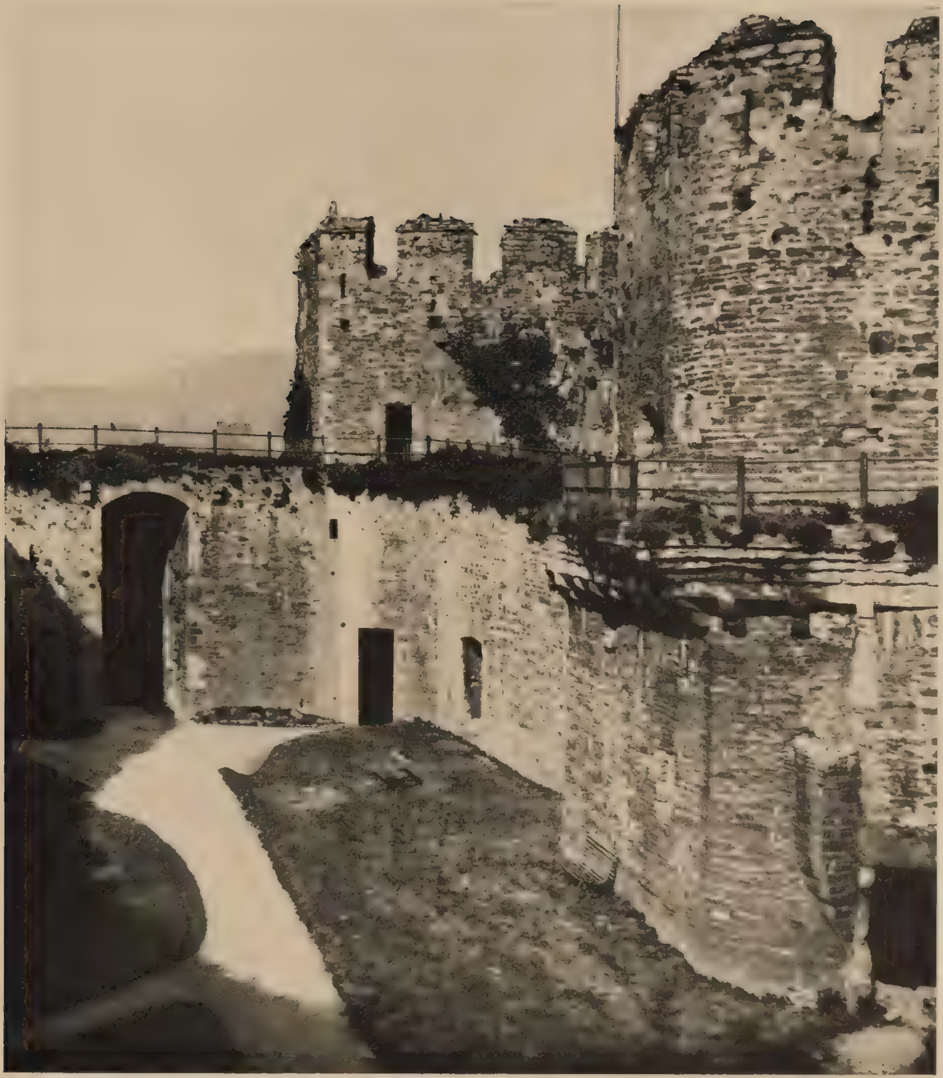

Fig. 1. Conway Castle. The Outer Bailey, looking north-west

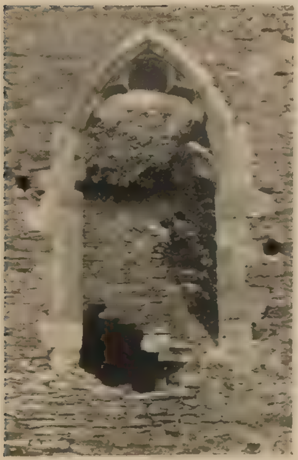

Fig. 2. Conway Castle. The Great Hall: one of the North Windows

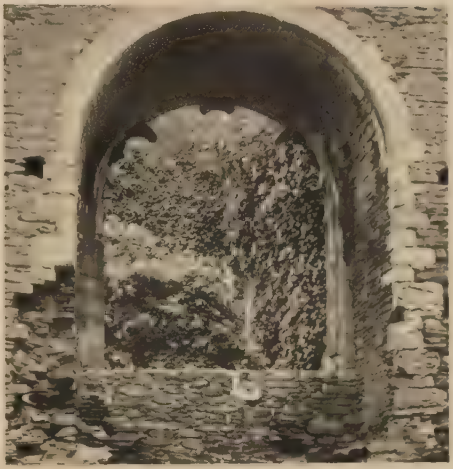

Fig. 3. Conway Castle. The Great Hall: the East Window

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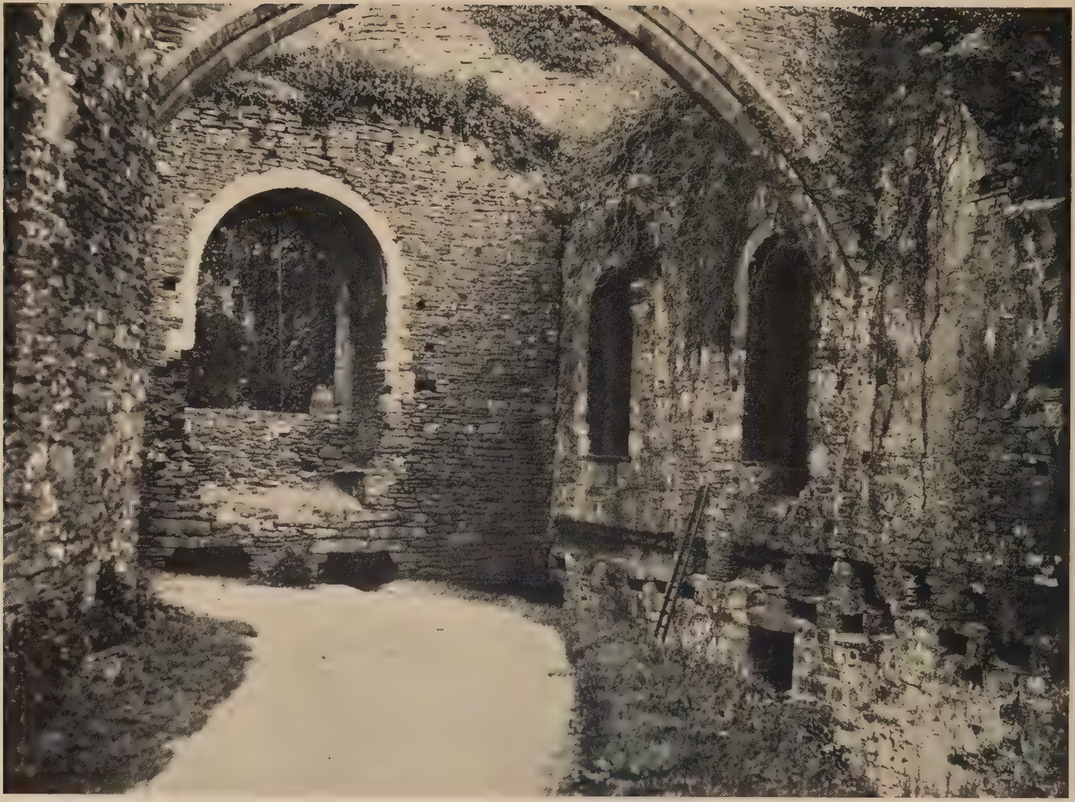

Fig. 1. Conway Castle. The Great Hall, looking east

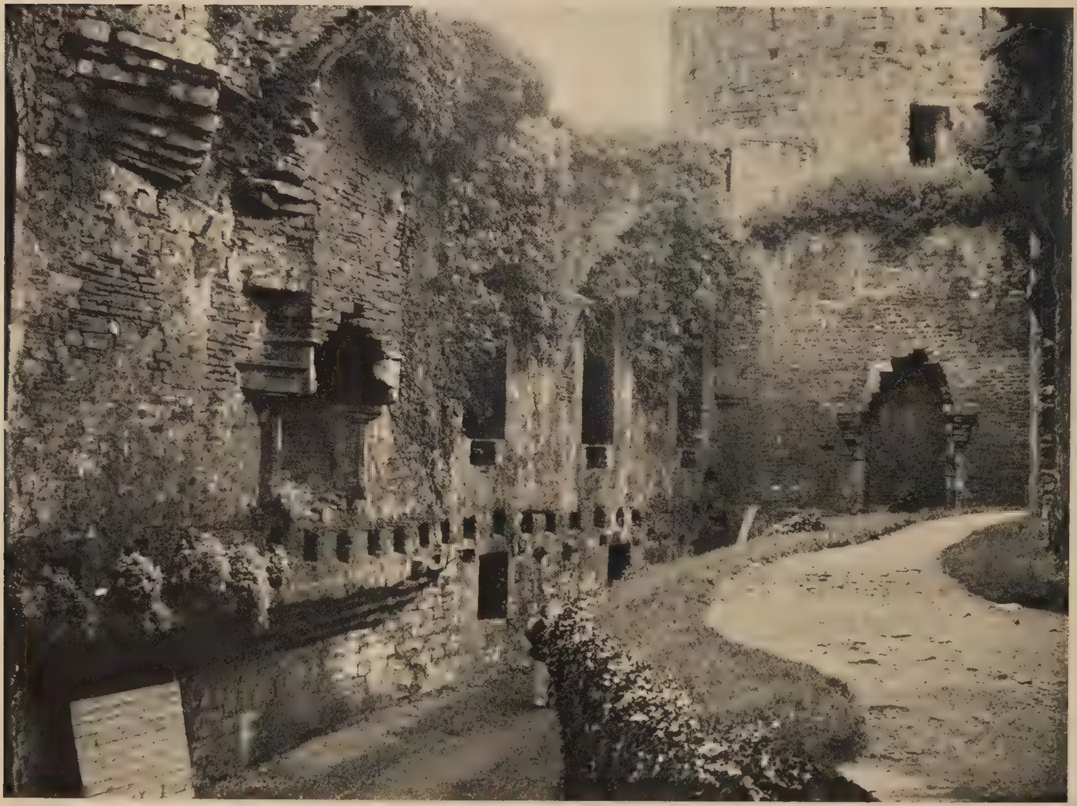

Fig. 2. Conway Castle. The Great Hall, looking west

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the courtyard, and the descent into the inner bailey was commanded by a guard-room on the upper floor of the building on the right. The guard-room has a window, originally of two lights, and a large opening or doorway through which missiles could be thrown. Both have been extensively restored (fig. 8 and pl. LIII, fig. 1).

In the inner bailey there is a two-storey building, which is continuous round the south and east sides of the bailey and has on the upper floor three large rooms. The structural work of this building was erected in 1285 on taskwork, master James of St. Gregory being paid £320 for the masonry and master Richard, engineer, and Henry de Oxford, carpenter, £100 for the carpentry work *aulae et camerarum Regis et Reginae in castro de Conewey.*[1] In the following year the building was called the *aula Regis*, and again the *aula Principis*.[2] Here again the walls of the bailey must have risen to a considerable height before this building was designed. On the north the internal wall abuts half-way across a loop-hole. On the south there are three loop-holes, built high up in the bailey wall; and not only does the partition wall abut halfway across the middle loop-hole, but the floors of the upper rooms, being 2 ft. 4 in. higher than the floors of the loop-holes, partly cover all three (pl. LV).

On the ground-floor are two kitchens; a room for the guard and other servants; and two passages, one to the east gateway and the other to the broken tower, where there is a large oven for the use of the inner bailey. Both kitchens have wide fire-places, the dressings of which have been torn away. Near the fire-place of the east kitchen is a low doorway which opens out through the south wall to a point high above the rocks, and was probably used for the disposal of ashes and other refuse. Another doorway, 4 ft. above the floor of this room, leads to the south-east tower. Within the doorway on the one side are a newel stairway to the upper floors of the tower and a mural passage with steps down to the east gateway; and on the other side there is a vaulted mural chamber from which a flight of steps leads up to a garderobe and loop-hole. The entrance from the kitchen leads directly into the room of the tower above the basement. The basement itself must have been a prison; it received light solely from a small rectangular hole, placed high in the wall on the side toward the river, and was entered from above by a trap-door.

The guard-room has one loop-hole in the north wall and another, now partly blocked, in the west wall. The entrance doorway has been destroyed and most of the dressings of the doorways to the kitchens have also disappeared; all these rooms were lighted from the courtyard by windows, now ruinous, which had stone seats and were each of two lights.

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[1] Pipe Roll 14 Edw. I, 1286, Memb. 26 d.; E. 372. 131.

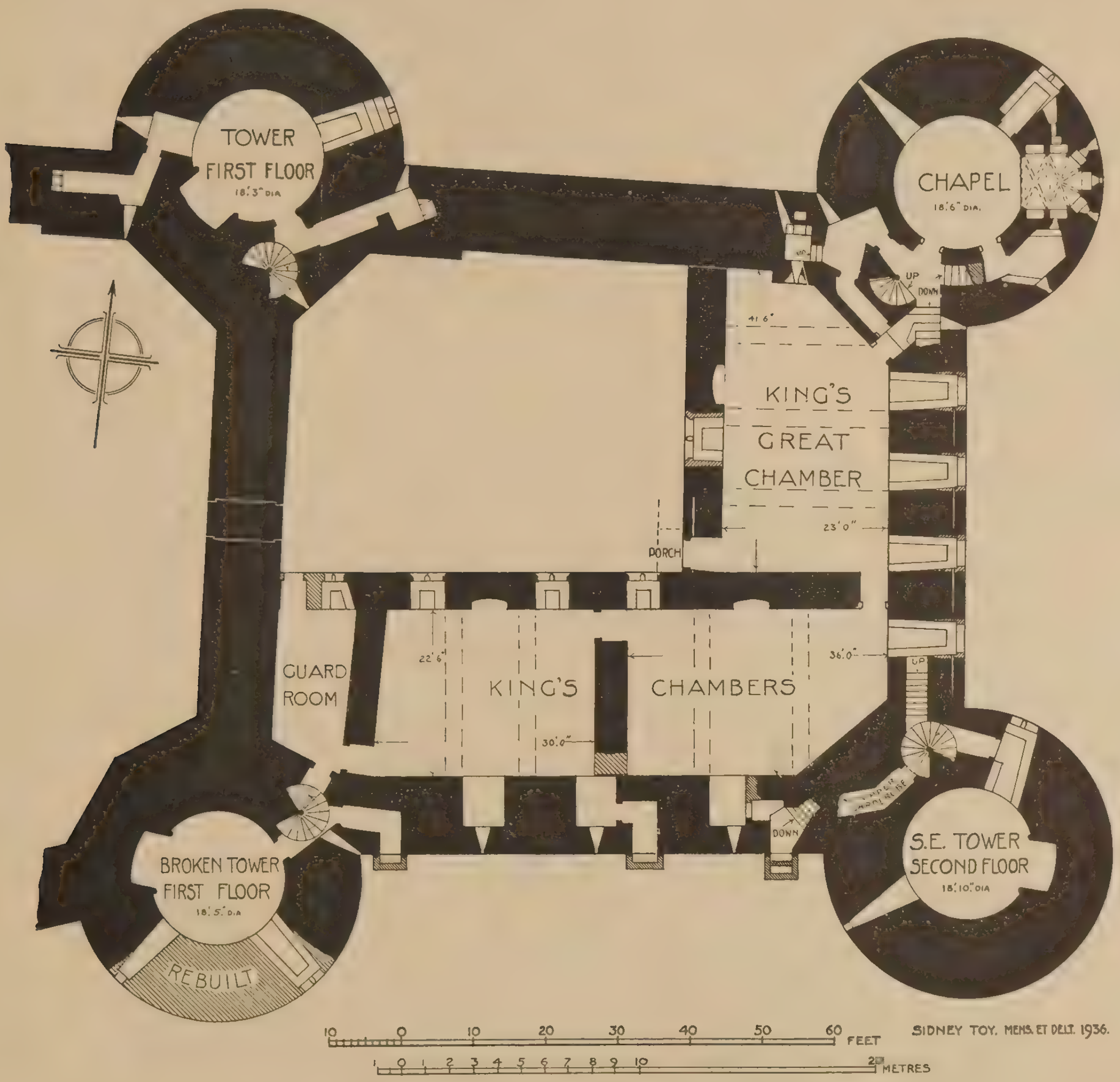
[2] Exchequer Accounts 14 Edw. I, 1286; E. 101. 485. 28.

The ground-floor chamber of the north-east tower was also for the use of the guard and is connected with the guard-room by a passage. Another passage, through the wall on the east side of the tower, terminates in a doorway which commands the approach to the east barbican. This doorway not only provided an opening through which large and heavy missiles could be discharged on enemies advancing up the steps but also a means of escape in emergency. On one side of the passage to the doorway there is a circular chamber, now partially blocked, and on the other a stairway to the first floor.

The king's chambers are reached by means of stairways running north and south through the wall from the east gateway. That going south led first to the newel stairway in the south-east tower and thence by a flight of steps down to a window in the east wall of the middle chamber (fig. 8). Except that the great chamber extends over the gateway passage these rooms correspond in size with those below and are all connected by doorways in the partition walls; the rough doorway to the guard-room commanding the middle gateway is probably of late date. One doorway from the great chamber opens directly on to the courtyard, 12 ft. above the ground. Another opens on to a maze of passages and stairways in the north-east tower. One of these passages leads to a chapel on the first floor of the tower; two others, by different doorways, into one mural chamber. Two flights of steps lead down, one to the ground-floor of the tower and the other to the east gateway; and a newel stairway rises to the upper floors of the tower and the battlements. A garderobe adjoining the mural chamber had two windows, one in the outer wall and the other looking into the great chamber.

There is a fire-place in each of the three chambers, but the only remaining cut stonework is a moulded lamp-bracket in the west chamber. In the south wall are the three loop-holes already mentioned. Half of the middle loop-hole, which has a garderobe adjoining it, was covered by the partition wall between the two chambers, now broken away at this point. At first this and the west loop-hole must have been reached by steps up from the ground and afterwards by steps down from the upper floor. The east loop-hole could always be approached by steps up from the mural chamber in the tower, as already noted. There are four windows in the internal walls to the courtyard and four in the east curtain overlooking the barbican.

The roof over these chambers though originally covered with shingles was probably later covered with lead. It was supported on seven pointed stone arches similar to those of the great hall; three over the great chamber and two over each of the others. All but one, the eastern arch over the west chamber, have been destroyed. In 1347 orders were issued by the Black Prince 'to complete the arches of the hall of the prince's castle of Conway and repair the defects of the castle', and Sir John de Weston was allowed 'the costs reasonably incurred by him in making and repairing the arches of the hall . . . as well as other defects in the said castle'.[1] It is not clear to which hall these orders refer, but the only works in the castle which can be definitely attributed to the Black Prince occur in this building. The window from the great chamber to the courtyard is of this period, and its insertion would involve the partial if not the complete rebuilding of the middle roof-arch of the chamber.


TOWER
FIRST FLOOR
18'3" DIA
CHAPEL
18'6" DIA.
UP
UP
DOWN
41'6"
KING'S
GREAT
CHAMBER
23'0"
PORCH
GUARD
ROOM
22'6"
KING'S
CHAMBERS
30'0"
36'0"
UP
DOWN
BROKEN TOWER
FIRST FLOOR
18'5" DIA
REBUILT
S.E. TOWER
SECOND FLOOR
18'10" DIA
10 0 10 20 30 40 50 60 FEET
1 0 1 2 3 4 5 6 7 8 9 10 20 METRES

SIDNEY TOY. MENS. ET DELT. 1936.

Fig. 8. Conway Castle. The Inner Bailey. Plan of First Floor

The windows in the east wall as originally constructed must have been like those on the south side of the great hall—long single lights with transoms. Later, probably during the operations of 1347, the jambs below the transoms were widened from 1 ft. 8 in. to 4 ft. That the jambs have been cut back below this level and are not as originally built is clear from the inside. As enlarged the windows were protected on the outside by a grillwork of iron and within by wood shutters secured by long timber bars. After the ironwork was wrenched out, probably in a rough manner, in 1665, the transoms, unsupported and perhaps broken, fell away, leaving the windows in their present shouldered form (figs. 3, 8, and pl. LIV, fig. 1).

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[1] *Registers of Edward the Black Prince*, i, 46, 61.

The doorway from the great chamber to the courtyard is at first sight difficult to account for. It has no relationship with the opening from the guard-room at the west of the bailey, as has been suggested; nor are there any vestiges of a gallery between the two. The openings are on different levels, and although there are holes at various heights on the face of the wall between them none can be associated with regular corbels or beam-holes. In the Exchequer Roll of 1286 already referred to there is an entry of a small sum for boards bought *ad aulam Regis ad superponendas super frontem porchae ejusdem aulae*,[1] indicating that there was a timber porch here, which was perhaps reached by a movable stairway (fig. 8, and pl. LIII, fig. 3).

The three windows from the south chambers to the courtyard are alike. They were each of two lights with tracery of particularly fine design. Most of the tracery has disappeared, but sufficient exists to indicate the form of the complete window. Pl. LIII, fig. 3 shows two of these windows. The two lights were grouped together under a pointed head enclosing three trefoils, the spandrels being pierced by smaller trefoils. The complete window is shown in fig. 9. The window from the great chamber to the courtyard is 10 in. higher and 1 ft. 5 in. wider than these last and retains fragments of tracery of a different and later design, and was probably inserted in 1347 (pl. LIII, fig. 2). It was of two lights with reticulated tracery and as completed is shown in fig. 10.

The chancel of the chapel is formed in the thickness of the wall on the east side of the tower, and is a fine example of the work of the close of the thirteenth century. It is apsidal, and is divided into panels by wall-shafts, which support the ribs of a groined roof. A wall-arcade of trefoiled arches with stone seats at the base is carried round the chancel, and above the arcade at the east are three lancet windows, one in each bay of the apse. The capitals of the shafts are carved with leaf ornament. At the south-east are the remains of a piscina. A rectangular aperture on the south opens to a mural chamber, which is provided with stone seats, and was entered from the central space or nave of the chapel. A similar small opening on the north, formerly fitted with a shutter,

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[1] E. 101. 485. 28.

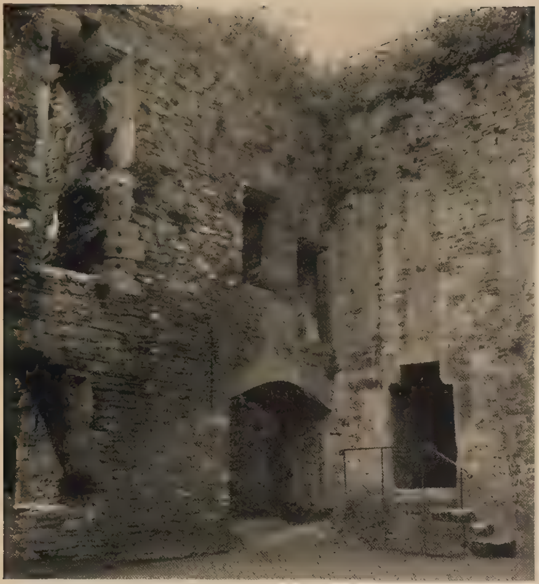

Fig. 1. Conway Castle. The South-West Corner of the Inner Bailey

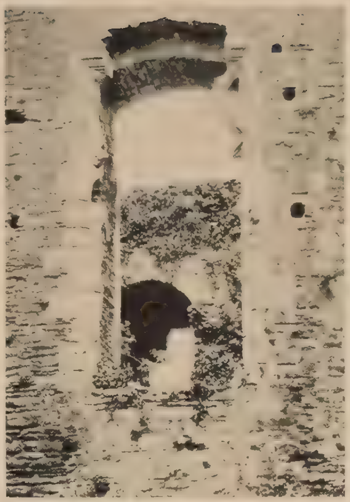

Fig. 2. Conway Castle. The West Window of the King's Great Chamber

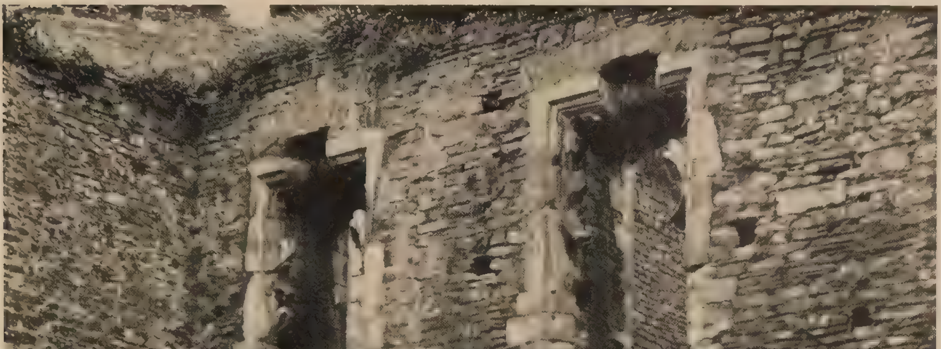

Fig. 3. Conway Castle. The South-East Corner of the Inner Bailey

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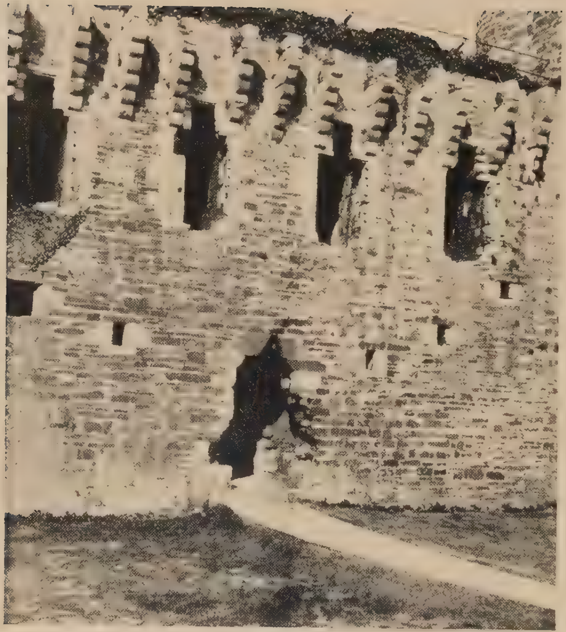

Fig. 1. Conway Castle. The East Wall

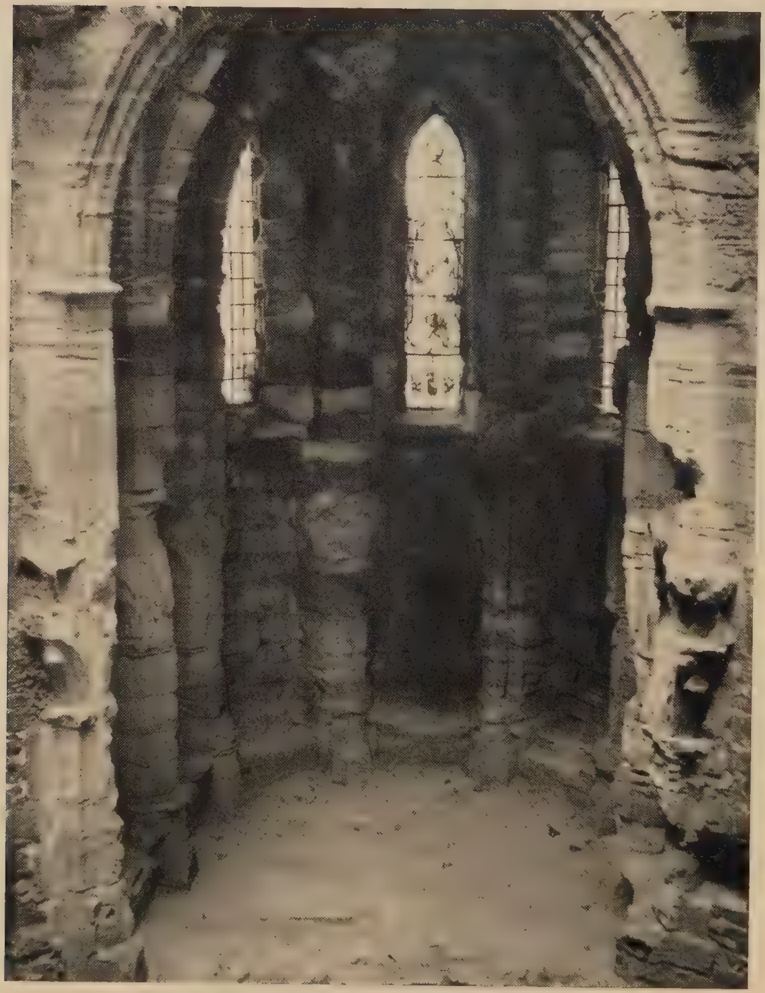

Fig. 2. Conway Castle. The Chapel

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passes through to the adjoining window. Remains of trefoiled arches, which are not returned against the wall of the tower, but are in line with those in the chancel, seem to indicate that the arcade formerly extended, or was designed to extend, westward of the chancel arch. The whole of this work is now in an advanced stage of decay; the mouldings are weather-worn, many of the vaulting-ribs are destroyed, and much of the wall-arcading is broken away (fig. 11 and pl. LIV, fig. 2).

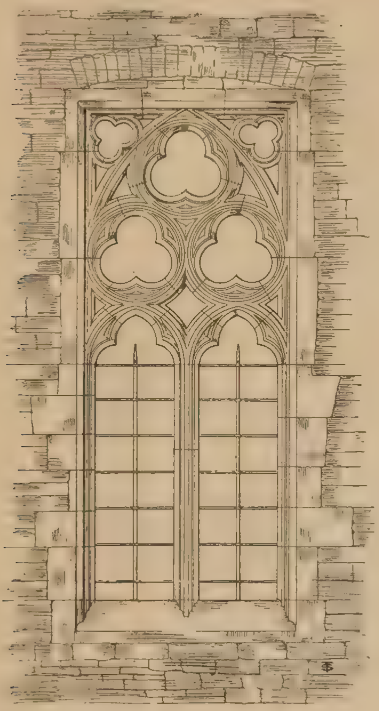
Fig. 9. Windows of the King's Chambers, as complete

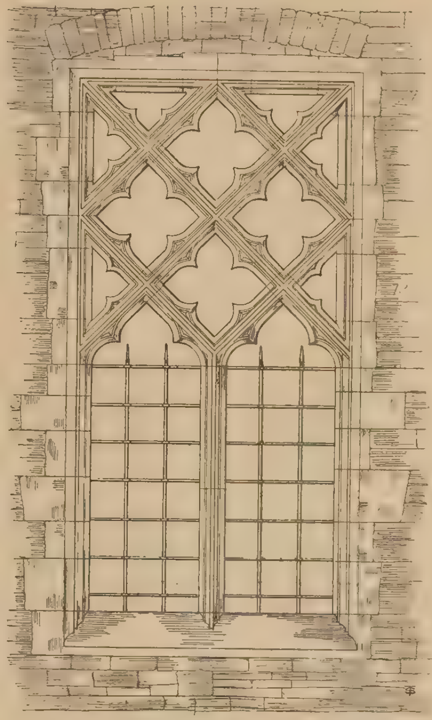
Fig. 10. West Windows of the King's Great Chamber, as complete

Two mural chambers, one above the other, and each provided with a garderobe, are constructed in the thickness of the wall at the west of the chapel. The lower chamber was noted above. The upper chamber was entered from the newel stairway. It has a small window looking into the chapel, and a vaulted roof, from the summit of which a shaft for ventilation rises to a narrow opening on the outside of the tower.

When Grose visited the castle about 1780 the chapel was known as the king's chamber.[1] But Pennant, writing about the same time, suggested that the arched recess, i.e. the chancel, which he called an oriel, had been a lady's

[1] *Op. cit.*

toilet, and was probably used for that purpose by Queen Eleanor.[1] If this suggestion was correct it appeared that some other abode had to be found for the king. This tower was accordingly called the Queen's Tower, a name retained even after the true purpose of the recess was understood, and that at the south-east the king's tower. But if the name 'king's chamber' is misapplied in respect to the chapel, the tower itself might well be called the king's tower. It is strongly guarded, has many mural chambers, and means of retreat are provided in all directions. The building-work of the castle was in its early stages when Edward I and Queen Eleanor were at Conway in the early summer of 1283.

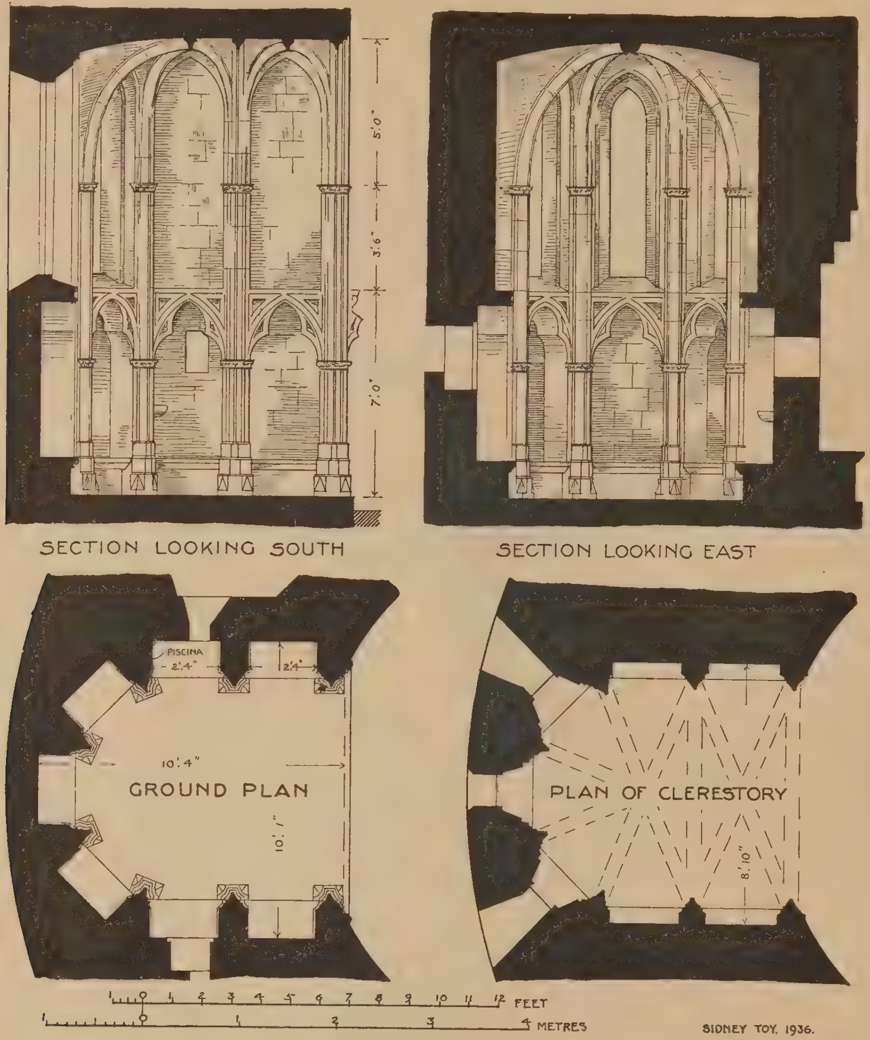
5'0"
3'6"
7'0"
SECTION LOOKING SOUTH
SECTION LOOKING EAST
PISCINA
2'4"
2'4"
10'4"
GROUND PLAN
10'1"
PLAN OF CLERESTORY
8'10"
FEET
METRES
SIDNEY TOY, 1936.

Fig. 11. Conway Castle. The Chancel of the Chapel

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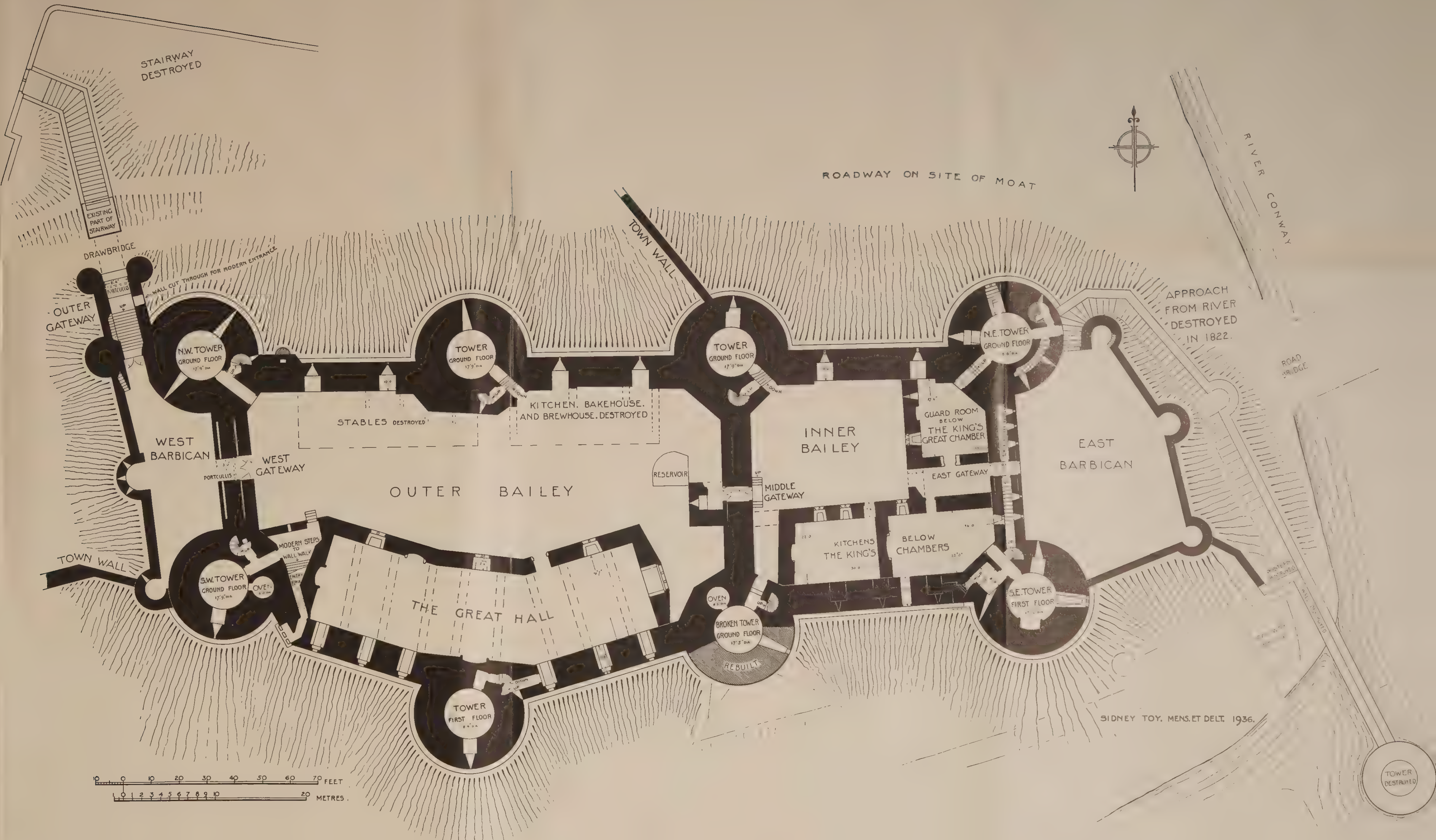
[1] *Op. cit.*, p. 312.


STAIRWAY DESTROYED
EXISTING PART OF STAIRWAY
DRAWBRIDGE
PORTCULLIS
UP
WALL CUT THROUGH FOR MODERN ENTRANCE
OUTER GATEWAY
N.W. TOWER GROUND FLOOR 17'9" DIA
WEST BARBICAN
WEST GATEWAY
PORTCULLIS
TOWN WALL
S.W. TOWER GROUND FLOOR 17'9" DIA
OVEN
MODERN STEPS TO WALL WALK
STABLES DESTROYED
TOWER GROUND FLOOR
KITCHEN, BAKEHOUSE, AND BREWHOUSE, DESTROYED
OUTER BAILEY
RESERVOIR
THE GREAT HALL
TOWER FIRST FLOOR
TOWN WALL
TOWER GROUND FLOOR
MIDDLE GATEWAY
OVEN
BROKEN TOWER GROUND FLOOR 17'5" DIA
REBUILT
INNER BAILEY
KITCHENS THE KING'S
BELOW CHAMBERS
GUARD ROOM BELOW THE KING'S GREAT CHAMBER
EAST GATEWAY
N.E. TOWER GROUND FLOOR
S.E. TOWER FIRST FLOOR
EAST BARBICAN
ROADWAY ON SITE OF MOAT
RIVER CONWAY
APPROACH FROM RIVER DESTROYED IN 1822.
ROAD BRIDGE
TOWER DESTROYED
SIDNEY TOY, MENS. ET DELT. 1936.
10 0 10 20 30 40 50 60 70 FEET
1 0 1 2 3 4 5 6 7 8 9 10 20 METRES.

Conway Castle: Ground Plan
Published by the Society of Antiquaries of London, 1937

In the following year the king's centre was at Caernarvon, and he paid only two short visits to Conway. But during the campaign of 1295 he spent many weeks at Conway castle, and the royal apartments are clearly centred about this tower.

The principles of fortification adopted at Conway Castle differ considerably from those employed in the other Edwardian castles of North Wales, and the design must be the work of another master mind. The rolls give no help as to his name. There were many master builders: as James of St. Gregory and James of St. George, master masons; Richard, master engineer; and master Laurence and Henry of Oxford, carpenters. But all these men are concerned with work after the main walls of the castle were well advanced; the controlling hand is not apparent. In most of the other castles, as at Caernarvon and Harlech, the strength of the defence is concentrated on great gatehouses. These powerful buildings provide ample accommodation for a strong guard of men, and are defended at intervals by three or more systems of machicolations, portcullises and doors. The strength of Conway was in the difficulty of approach; the west gateway itself was relatively weak. Again in the other castles the wall walk is interrupted by towers and gatehouses, which stand astride, and in some cases completely block it. This arrangement was of great value in the event of one section of the wall being carried by assault. At Conway the walk is continuous all round the curtain walls.

But these and other peculiarities render the building all the more valuable. Despite its weather-worn appearance Conway castle is one of the most perfect examples of thirteenth-century fortifications extant; practically every stone has left a trace, and could be replaced. The careful removal of ivy and other vegetable growth from the walls, and the arrest, as far as possible, of further decay are works much to be desired for the preservation of this invaluable monument.

In conclusion, I desire to express my thanks to the Town Clerk of Conway for permission to carry out a survey, which was conducted at various periods during five years; to the borough surveyor for valuable help in the examination of the castle; and to our Fellow Mr. L. F. Salzman for assistance with the documents at the Public Record Office. All the drawings were made by the writer himself, from his own measurements, and he is also responsible for all the photographs.

IX. *The Halberd in Bronze Age Europe*

A Study in Prehistoric Origins, Evolution, Distribution, and Chronology

By SEÁN P. Ó RÍORDÁIN, *M.A., Ph.D., F.S.A., M.R.I.A.*

INTRODUCTION[1]

THE halberd is of sufficiently frequent occurrence and of a sufficiently distinctive character to be a most useful 'type fossil' by which may be traced connexions and the trend of cultural developments in prehistoric Europe. That another paper on the subject is not a superfluity in archaeological literature is evident from the lack of any paper dealing at once with the Irish and Continental material. That this paper should be written in Ireland is fitting because the amount of the Irish material is so large. When Coffey wrote his valuable paper on 'Irish Copper Halberds' (frequently referred to in the following pages), he had before him the material in the National Museum of Ireland, which comprised at that time 49 halberds. This number has in the meantime increased to 71, while the total number of Irish halberds of which I have been able to get particulars is 143, 67 having known localities. This body of material, which is considerably greater than that from any other country, makes it clear that the part played by Ireland in the story of the European halberd must have been an important one. When we come to study the typology, evolution, and distribution of the weapon, we shall get further proof of this importance.

In dealing with the subject it is found that chronological considerations are of prime importance, and the solution of these, involving, as it does, the presentation of all the associated finds, gives also the cultural background for the halberd. I therefore, in this paper, first give an account of the hoards and grave-groups which contain halberds; then, following a short note on definition and material, I discuss typology and distribution. Halberd-types of non-metallic substances and some analogous weapons of metal are presented in a search for prototypes and degenerations of the halberd proper. While in the main portion of the paper conclusions are sometimes forced upon one's notice by the material itself, or cannot be altogether avoided in the text, I have tried to keep the deductions separate from the facts on which they are based, and they are therefore presented at the end.

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[1] ABBREVIATIONS (others used are obvious in meaning): *P.R.I.A.* = *Proceedings of the Royal Irish Academy*; *J.R.A.I.* = *Journal of the Royal Anthropological Institute*; *J.R.S.A.I.* = *Journal of the Royal Society of Antiquaries, Ireland*; *P.S.A.S.* = *Proceedings of the Society of Antiquaries, Scotland*; Ebert = *Reallexikon der Vorgeschichte*, Berlin, 1924; Montelius: *Die Chron.* = *Die Chronologie der ältesten Bronzezeit in Nord-Deutschland und Skandinavien* (Braunschweig, 1900); *P.Z.* = *Praehistorische Zeitschrift*; *A.u.h.V.* = Lindenschmit: *Altertümer unserer heidnischen Vorzeit*; NMD = National Museum of Ireland, Dublin; B = Municipal Museum and Art Gallery, Belfast; BM = British Museum; NMS = National Museum of Scotland, Edinburgh; NMW = National Museum of Wales, Cardiff; P = Private possession; Mainz = Römisch-Germanisches Central-Museum, Mainz.

The Question of Date: The Evidence of Hoards and other Associations

As must frequently be the case with archaeological deductions, chance has played a great part in the evidence upon which the so far accepted dating of the halberd in Great Britain and Ireland is based. The subject of the halberd having been treated comprehensively in English in only one paper,[1] and the writer of that paper having had before him the evidence of but a single associated find, all subsequent deductions have been coloured by this hoard, which thus achieves an importance, because of its priority, which at this stage will have to be carefully considered.

In the following pages it is proposed to present a summary of all associated finds of halberds however much the evidence may be at variance with the orthodox dating. Only those are omitted where there is definite ground for doubting the association; and in cases where reasonable doubt may be cast upon the individual find we shall discuss the matter on the basis of the available information, leaving, however, a general discussion of date to follow the complete citation of the datable finds.

Ireland

Near Birr, Offaly (fig. 1).

This find is first brought to notice in Coffey's paper on Irish Copper Celts[2] and is further discussed by him in his halberd paper[3] where he deals with Professor Gowland's views[4] on the subject of the type of the axes. The find was made in 1892 near Birr and the objects, consisting of 'three copper celts, a fragment of a fourth (butt end), a copper halberd, and a short blade of copper of somewhat similar form', were brought to a Mr. Morrison of Birr from whom they were obtained by Mr. Robert Day[5] of Cork. The only information regarding the find is that the objects were found under the bog in the white clay. It is interesting to note that Professor Gowland in his paper already cited reproduces Coffey's plate and states[6] that 'the uppermost celt, the halberd and the short blade were found together'. Whether in the intervening years further information had come to light on which Professor Gowland saw fit to omit the other objects which Coffey states were found with the halberd we have now no means of ascertaining; but it is well to point out here that the objects had already passed through the hands of at least three

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[1] Coffey, *P.R.I.A.* xxvii (1908–9), 94 (quoted as 'Coffey' in lists at end of this paper).

[2] *J.R.A.I.* xxxi (1901), 295.

[3] pp. 95, 99, 113.

[4] *J.R.A.I.* xxxvi (1906), 24.

[5] *Catalogue of Day Collection* (London 1913), 40, no. 285.

[6] p. 24.

HOARDS-IRELAND

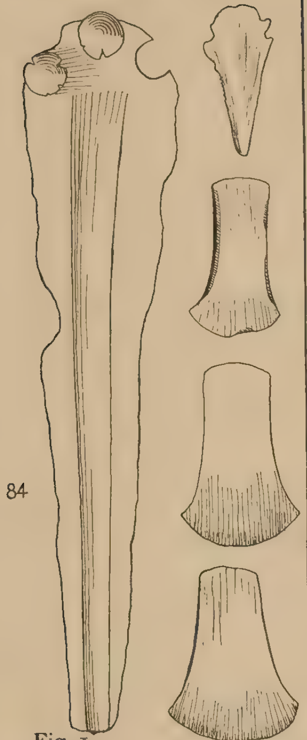

Fig. 1

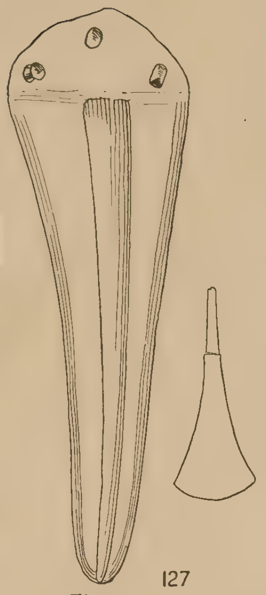

Fig. 2

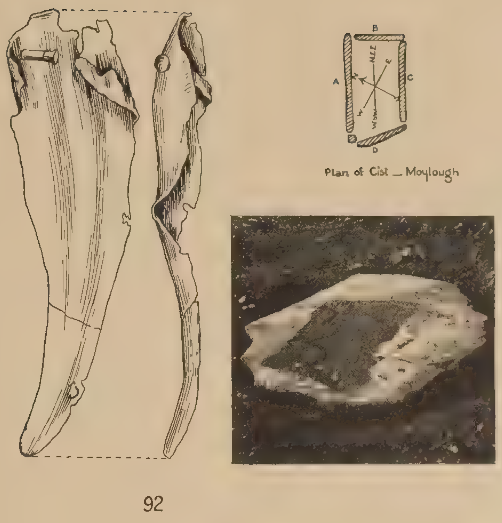
B
A
C
D
Plan of Cist _ Moylough
92

Fig. 3

HOARDS-ENGLAND

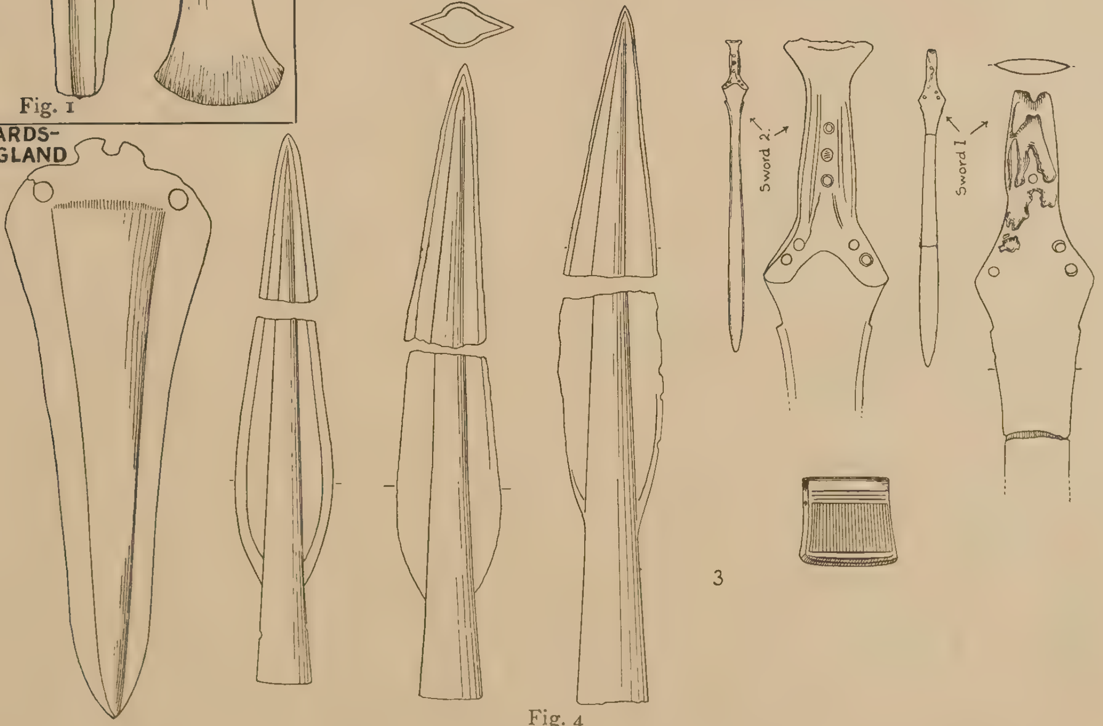
Sword 2
Sword 1
3

Fig. 4

Fig. 1. Birr, Offaly (⅓). Fig. 2. Letterkenny, Co. Donegal (⅓). Fig. 3. Moylough, Co. Sligo (⅓), plan after Morris.
Fig. 4. Stoke Ferry, Norfolk (all ⅓ except full-length swords)

(The numbers beside the halberds in the illustrations correspond with those in the lists at the end of the paper) individuals before they reached Coffey for publication. Furthermore, while the halberd can seemingly be identified in the Catalogue of the Day Sale as no. 285, it is not given a find-place there, nor can any of the celts there listed be recognized as those from the Birr find. We must also notice that the object described by Coffey as 'a short blade of copper of somewhat similar form' (i.e. similar to the halberd) shows in his figure a saw-like edge, while the fragment of a flat axe in his figure 55 has 'been rubbed down to a sharp edge at the butt apparently for use as a small implement'. We are not informed if this interference with the find took place in ancient or recent times, but the serrating of the edge of the halberd-fragment would certainly seem to be such as might have been done after the finding of the object.[1] To sum up, the whole points to delay between the discovery of the objects and their arrival in the Day Collection; and, since a case might be made for the non-association of the objects quite as well as for their association, we must say that undue weight should not be placed upon this find, upon which so far the whole dating of the halberd in Ireland has rested.

Letterkenny, Co. Donegal (fig. 2).

In Salisbury Museum is a tanged chisel (no. 520), and in the Brackstone Catalogue, to which collection the object belonged, occurs the note:

> 520 Chisel or arrow found with the scythe 519 at Letterkenny, Co. Donegal. June 1852.

The word 'scythe' can refer only to a halberd of the curved type, and the relevant entry, which does not give much in the way of description, mentions rivets and therefore seems to confirm this:

> 519 Fine specimen (recently found June 1852) at Letterkenny, Co. Donegal—the rivets perfect.

This halberd is not at present among the Salisbury collections but is, I believe, identical with one in the Ashmolean Museum, Oxford (no. 1927–2831), the catalogue entry for which ascribes it to Letterkenny, Co. Donegal, and gives the note 'Brackstone, 1849'. This specimen is mentioned by Evans.[2] We find a discrepancy between the Salisbury and the Ashmolean catalogues—if the halberd was found in 1852 it could not have been in the Brackstone collection in 1849. This, however, is not a serious point, as a mistake may easily have been made in either entry, and on the available information it seems safe to conclude that the halberd is the one which the Brackstone catalogue ascribes to Letterkenny and which was said to have been found in association with the tanged chisel. That they were really found together we have nothing more definite to go on than the information here given.

Moylough, Co. Sligo (fig. 3).[3]

The halberd-find here to be dealt with is the only Irish associated find regarding which we can feel quite sure of the authenticity of the details of discovery. A cist was discovered in June 1928 by a man engaged in raising sand and was examined by Mr. Morris 'before it had been despoiled in any way'. It was found that the cist consisted of four side slabs, the longer sides being parallel, the shorter not. In the cist were found about one cubic foot of cremated bones, and a halberd which had evidently been burnt. It was much corroded, shrivelled up from heat, and broken (in ancient times) across the middle.

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[1] Déchelette (ii, 275) deals with bronze saws of prehistoric date. None has been found in Ireland, but Wheeler (*Prehistoric and Roman Wales*, 163) notes one from Wales.

[2] *Bronze Implements*, 263.

[3] *J.R.S.A.I.* lix (1929), 113; Henry Morris, 'Ancient Graves in Sligo and Roscommon'.

The covering-slab next claims our attention. It is marked with a rather indistinct line consisting of a series of arcs, made by pitting the surface with a sharp-pointed instrument. This ornament was on the under side of the stone and was not placed centrally. It will be seen from the photograph that this surface of the slab is chemically marked by the soil except where it covered the cist.

Hillswood Td., Parish of Kilconnell, Co. Galway (figs. 49 and 50, nos. 99–105).

A further find, which may be mentioned here, does not give much assistance in chronology since only halberds were found in the hoard. The find, consisting of seven very fine halberds, was made in 1850 during the work of constructing the Midland Great Western Railway, and was communicated to the Royal Irish Academy[1] by G. W. Hemans, Chief Engineer. The seven halberds were found 'about two and a half feet under the surface of a shallow bog . . . stuck in a bunch in the ground, with the points down. No other relics appeared near them.' The rivets (complete on four specimens) go to show that the halberds had been already hafted, the handles having been detached before the deposition of the blades in the ground. The hoard would seem to have been the property of an ancient craftsman who had brought those halberds together either for the purpose of re-hafting them or (and in this connexion we must note their late type) of using the metal for other purposes.

Cotton Moss, Cotton, Co. Down (fig. 46, nos. 53–5).

Yet another find which contained halberds only was found in the 'moss' (bog) in Cotton Townland, Co. Down, about the middle of the last century. The find remained the property of the farmer's family until about 1920 when it was acquired by Mr. Hugh Kirk of Newtownards, from whom it came into the possession of the National Museum of Ireland.

Great Britain

Stoke Ferry, Norfolk (fig. 4).

In the Ashmolean Museum, Oxford, are the following objects said to have been found together at Stoke Ferry, Norfolk:

halberd, which seems to be of copper;[2]
3 broken spear-heads of late Bronze Age type;
2 leaf-shaped swords, one broken in three, the other in four pieces;[3]
bronze sword-chape, with slightly hollowed sides, rounded base, and faces decorated with horizontal and vertical fluting.[4]

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[1] *P.R.I.A.* iv, 565; Wilde, *Catalogue*, 450.

[2] Evans, *Bronze Implements*, 270, 465.

[3] *Ibid.* 282.

[4] *Ibid.* 305, fig. 373.

This hoard is referred to in the *Proceedings of the Society of Antiquaries*[1] under the date 30th January 1873, when there were exhibited by J. W. Flower, Esq., F.G.S., the following objects:

> Two leaf-shaped swords, and three spear-heads, all broken; found together on the banks of the river Wissey, near Stoke Ferry, Norfolk.

It will be noticed that there is here no mention of the chape or the halberd. The latter, however, bears 'Hoard Stoke Ferry' upon it in Evans's writing and he states that it was found with the other objects (p. 270). The patination bears this out. The damaged condition of most of the objects points to the probability of their belonging to a founder's hoard.

Wroxeter, Shropshire (fig. 5).

A halberd[2] (Register number: 1905/11/6/1) in the British Museum is ascribed (label and catalogue) to Wrexham, Denbighshire, and is registered as having been found together with a small knife-dagger (L. 10·8 cm.). This information is evidently based on a statement from Mr. W. Talbot Ready, from whom the British Museum purchased the objects, but the halberd is already mentioned several times[3] in archaeological literature, and in each case is written down as having been found in Shropshire, and no mention is made of the dagger having been found together with it. Following the Register entry, however, the British Museum *Bronze Age Guide* (1920), p. 29, mentions the objects as having been found together and as coming from Denbighshire, and again Dr. R. E. M. Wheeler hesitatingly publishes them in his *Prehistoric and Roman Wales* (1925)[4] as found at Wrexham. The whole matter has been very carefully dealt with by Miss Lily F. Chitty in *Arch. Camb.*,[5] and in view of this it is not necessary to go further into the matter here since Miss Chitty's arguments[6] are convincing as to the find-place being in Shropshire;[7] and doubts as to the association of the halberd and knife-dagger (repeated and emphasized in conversation with the writer) should rule out this find for the purposes of the chronology of the halberd, though a description of it is included here for the sake of completeness.

Arreton Down, Isle of Wight.

Evans in his list of hoards[8] names the famous Arreton Down hoard and suggests that one of the dagger-like blades contained therein may be a halberd. A study of his fig. 306 and of those accompanying Sir Augustus Franks's[9] communication on the find fails, however, to convince one that the implements in question are other than daggers.

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[1] Vol. v (1870–73), 425.

[2] Illustrated, Ebert, iv, pl. 251; Wheeler, *Prehistoric and Roman Wales*, fig. 45; Kemble, *Horae Ferales*, 164; Evans, fig. 338, &c.

[3] Wright, *Uriconium* (1872), 298, and footnote, 65; *Arch. Journ.* ii, 414; *ibid.* xviii, 163.

[4] pp. 141, 144, fig. 45.

[5] lxxxiii (1928), 209.

[6] Which are accepted by Davies, *The Prehistoric and Roman Remains of Denbighshire*, 18.

[7] Miss Chitty suggests that the mistake arose through a hurried reading of 'Wroxeter' for 'Wrexham'.

[8] p. 460.

[9] *Archaeologia*, xxxvi, 326.

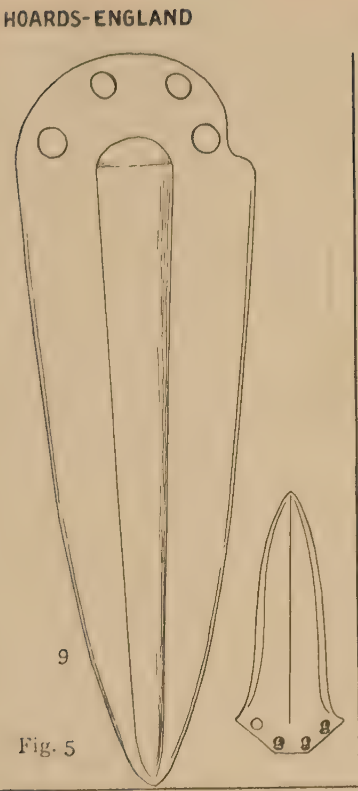
HOARDS-ENGLAND
9

Fig. 5

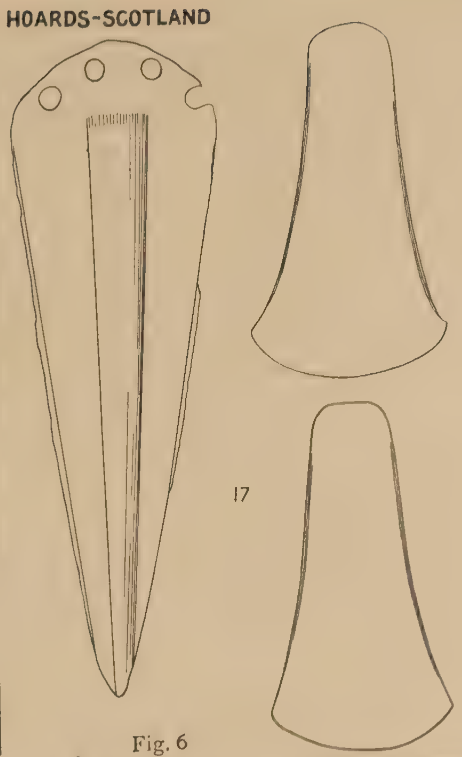
HOARDS-SCOTLAND
17

Fig. 6

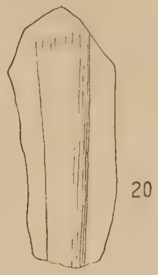

Fig. 8

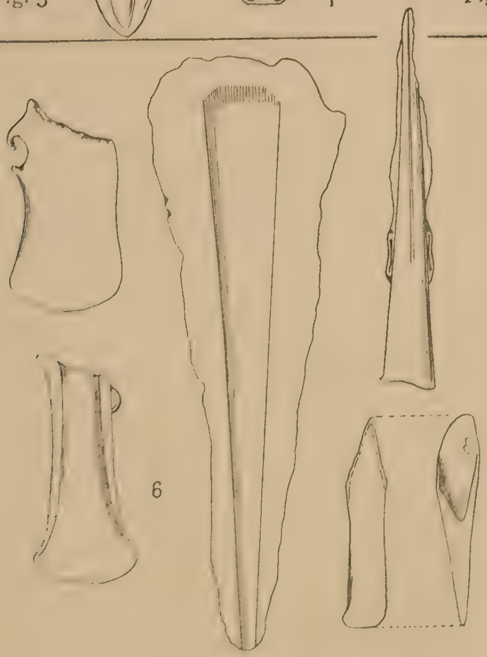

Fig. 7

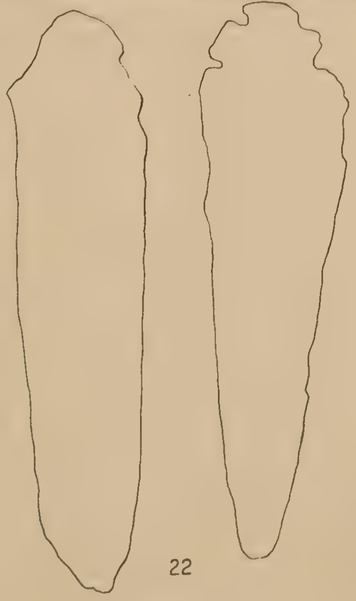

Fig. 9

Fig. 5. Wroxeter, Shropshire. Fig. 6. Sluie, Morayshire. Fig. 7. Islay, Argyll. Fig. 8. Bishop's Mill, Elgin.
Fig. 9. Backside of Aldie, Kinross. (All $\frac{1}{3}$)

Sluie, Edinkille, Morayshire (fig. 6).

In the National Museum of Scotland is a halberd from Sluie, Morayshire, which is said to have been found in association with two flat axes of bronze. Again it is necessary carefully to consider the evidence on which the statement of association is based. In his very useful paper on Scottish Hoards[1] Mr. Callander names the Sluie find, but is not certain of the authenticity of the association:[2]

> It is understood that these two axes were found in association with a halberd, though the record is not quite clear on this point.

However, discussing the dating of second period objects he says:[3]

> Only one hoard, from Sluie, Morayshire, shows the flat axe associated with the halberd; but this association is well established in Ireland and England.

We now turn to the original record of the find[4] and we learn that on Monday, 1st April 1861, there were exhibited to the Society of Antiquaries of Scotland:

> Two celts or axe-heads of bronze, about 6 inches long, and 3 inches across, and a Spear-head or Dagger-blade of bronze, 11 inches long and 3½ broad at the base which is rounded and pierced with four holes for fixing to a handle. These weapons were found at Sluie, on the Findhorn, and were exhibited by Sir John Dick Lauder, Bart.

It will be noticed from this excerpt that there is no definite statement that the articles were found together. The find is again dealt with in 1873[5] in an account of some Scottish Bronze Axes 'which apparently have been tinned'.[6] Here the original find publication is referred to but is read as an evidence that the bronze axes 'were found . . . along with a broad dagger of bronze'.

On this matter Dr. R. E. M. Wheeler kindly writes to me as follows, 5th July 1933:

> When in Edinburgh the other day I had a look at the halberd and flat axes said to have been found in association at Sluie, Morayshire. It is, of course, very risky to judge merely by a patina since the metal may not in each case be identical (e.g. the halberd may be copper and the axes bronze), but I should certainly say that from general appearance the association is to be doubted. The patina of the halberd differs notably from that of the axes.

Islay, Argyll (fig. 7).

This find, like the last, is in the National Museum of Scotland and consists of a halberd, two socketed axes, a looped spear-head, and a palstave with recesses on the sides instead of on the faces. All the objects are damaged—it would seem in ancient times. The acquisition of the objects by the Purchase Committee for the Museum and Library, 18th June 1881 to 3rd June 1882, is recorded as follows[1]:—

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[1] *P.S.A.S.* lvii (1922–3), 127. [2] *Ibid.* 128. [3] *Ibid.*

[4] *Ibid.* iv (1863), 187; Childe, *Prehist. of Scot.* 100, regards the association as doubtful.

[5] *P.S.A.S.* ix (1873), 428.

[6] At least one of the Sluie axes certainly seems to have been tinned over part of its surface, but when this was done is another question. The author quoted above makes a good case for prehistoric tinning, a process which is doubted in Ebert, 14, 537 (article by Götze).

> Hoard of bronze objects, found in Islay, consisting of one broad bronze Blade, one Spear-head, two Socketed Celts, and a small Palstave, all much injured.

This hoard, beyond being mentioned in Mr. Callander's paper, does not appear to have been further dealt with in archaeological literature. From the damaged nature of the objects it would appear to be a founder's hoard. The presence of the palstave and the looped spear-head together with the socketed axes would seem to place its dating back in the early part of the late Bronze Age. The palstave claims attention because of the method of hafting. The septum between the flanges is at right angles to the blade, making probable an adze form of mounting. These implements, rare everywhere, are of more frequent occurrence in Ireland than in Britain.

Bishop's Mill, Elgin (fig. 8).

In the National Museum of Scotland is a cast of a fragment of an implement with a broad mid-rib which is evidently part of a halberd. The original is in Elgin Museum and was found in a cist at Bishop's Mill, Elgin. No further information is available and we know nothing of the type of burial which it accompanied.[2]

New Machar, Aberdeenshire (fig. 55, nos. 7–9).

Before concluding the enumeration of hoards from Great Britain we must mention three hoards which contained halberds only. The first, from New Machar, Aberdeenshire, consisted of three halberds which are now in the Anthropological Museum, Aberdeen University. We are informed that they were

> Found while making a bridge over a ditch on a farm. All three lay together between the subsoil and a layer of moss about two feet thick, from which some years before a bank of moss eight to ten feet thick had been removed.[3]

Kingarth, Bute (fig. 55, nos. 10–12).

The wording of the original report[4] of this find is ambiguous and may be construed to mean that three halberds or five were found; Callander inclines to the latter interpretation[5]:—

> . . . believed to have consisted of five, though only three seem to have survived. Again, all three are very damaged, one of them (DJ. 10) being particularly corroded. The patina is dark rust coloured suggesting that they were found in a bog.

Baile-nan-Coille, Strath Brora, Sutherland.

There were exhibited[6] to the Society of Antiquaries of Scotland on 8th May 1882 by the Duke of Sutherland:—

> Two broad Bronze Blades . . . of the class of extra large dagger blades, with a broad base, and tapering rapidly to a rounded point, the base being pierced with

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[1] *P.S.A.S.* xvi (1882), 409; Childe, *Prehist. of Scot.* 100.

[2] Childe, *loc. cit.*

[3] *Catalogue of Aberdeen Univ. Museum.*

[4] *P.S.A.S.* iv (1863), 396.

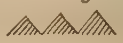
[5] *Ibid.* lvii (1922–3), 132.

[6] *Ibid.* xvi (1882), 240.

> rivet holes. The large one measured 10 inches long by four inches broad across the base; the other is without either point or base; they have been fixed it is supposed as axeheads to wooden handles . . . they were discovered by a road-contractor during a search for gravel near Baile-nan-Coille, Strath Brora at the foot of a slope, one foot deep in the gravel under three feet of soil, some of which had doubtless been washed down from above. About a mile's distance from the place to the north there is a group of thirteen hut circles and many tumuli within a low turf fence . . . . The blades . . . are now preserved in the Duke's Museum at Dunrobin.

Backside of Aldie, Craigton, Kinross (fig. 9).

A find which, as far as I know, has never been published has been brought to my notice by Dr. Margaret Mitchell of Edinburgh. It consists of two halberds, both badly corroded, and some urn fragments. Dr. Mitchell writes as follows:—

> The association with the urn is somewhat vague but here are the particulars. The label beside the halberds reads:
>
> 'No. 52. Two bronze spearheads found along with cinerary urn about 1854 to the west of the old farm—Town, Backside of Aldie. Donor, Mr. Robert Tillburn, Craigton, Kinross.'
>
> Now there are no urn fragments exhibited with the halberds. The only pieces of cinerary urn are in an adjoining case completely unlabelled and unidentifiable. They are numbered 153 but in the catalogue 153 is registered as a fire stick from New Zealand and there is absolutely no mention of cinerary pottery at all . . . The urn fragments constitute about two-thirds of a moderate sized cinerary urn. The type is a degenerate form of overhanging rim, and the ornament  incisions.

CONTINENTAL MATERIAL

The number of continental associated finds of halberds is large but is rather restricted in area, the largest number having been recorded in Germany. Though most of these finds are well known—indeed much better known than those in Great Britain and Ireland—it is thought well to give a résumé of the circumstances of and objects in each find as far as these are available.

GERMANY, WESTERN POLAND, AND AUSTRIA

Leubingen, Prov. Saxony (fig. 10).[1]

The remarkable nature of the grave covered by the Leubingen tumulus no less than the interest of its contents makes this burial of great importance, and it is desirable that we should study it at some length.

The tumulus, one of the largest in Thüringen, had a height of 8·5 m., a diameter of 34 m., and a circumference of 145 m. Three strata showed during the excavation: an upper layer, 2 m. in depth, containing Slavonic burials; an intervening earthen layer, almost $4\frac{1}{2}$ m. thick; and under this in the centre a cairn, over 2 m. high, which covered the burial. The method of burial was elaborate in the extreme when considered in relation to prehistoric burials in general. The surface of the ground was paved with stones set into the softened surface of the clay; a ditch 2 m. broad and $\frac{1}{2}$ m. deep was dug to form a circle of 20 m. diameter around the centre of the tumulus and to serve as a boundary for the subsequently erected cairn. At the centre was erected a wooden lean-to structure, rectangular (3·9 m. long, 2·1 m. broad inside its foundation ditch) in plan, and in cross-section an inverted V. The ridge-pole was supported by

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[1] A very full account of the excavation at Leubingen, with reference to the earlier publications, to the excavator's notes, and description of the finds, is given by Höfer in *Jahresschrift für die Vorgeschichte der sächsisch-thüringischen Länder*, v (1906), 1–59. Further references will be found in Ebert, vii, 286. See also Childe, *Danube*, 242.

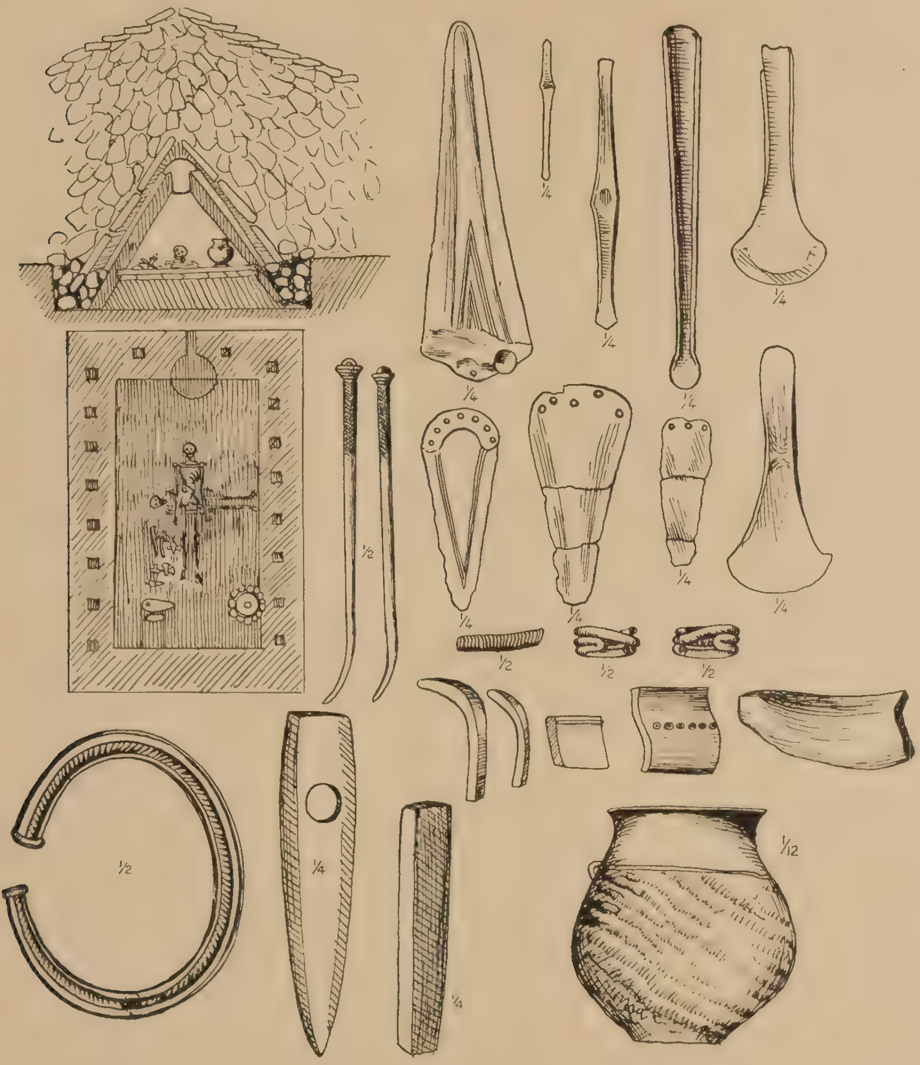

Fig. 10. Leubingen burial and grave-goods (after Höfer)

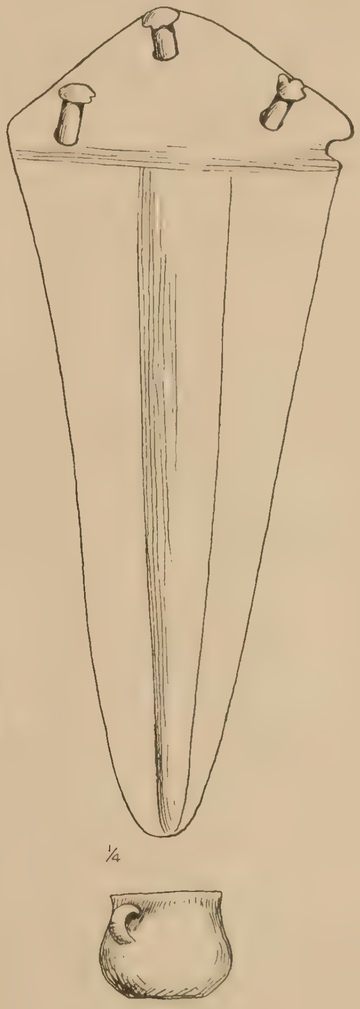

Fig. 11. Obhausen, Kreis Querfurt. Halberd ($\frac{1}{2}$) (after Höfer)

a heavy upright at the southern end and by seven lighter wooden supports from each side—the ends of these being set in the trench where they were held in position by a setting of stones. At the southern end four timbers, similar to those at the sides, served to carry the planks which closed that end. The northern end was left open. The sides were closed by the fastening on (by means of wooden pegs) of planks which, having a flat under surface and a convex upper surface, were evidently made by splitting them from the outer portion of tree-trunks. Where these planks did not fit closely the interstices were closed with a filling of plaster. As a final covering the whole was thatched, the thatch layer being about 15 cm. in thickness. The description of the construction of the grave-chamber as given by Höfer, and of which the foregoing is a brief abstract, shows the workmanship to have been of a high quality and such as indicated a considerable tradition of woodwork.

Over the whole surface covered by the tumulus were found liberal traces of fire, showing that ceremonial fires were burnt before the building of the mortuary-house and the construction of the cairn.

Within the house were found lying on the boarded floor a skeleton of an old man with corresponding grave-goods, while at right angles across this skeleton was found that of a girl of about ten years also accompanied by suitable grave-offerings. The stones which formed the cairn covering the mortuary-house were laid as far as possible in overlapping positions and constituted a further protection against damp from above for the house and its contents. Indeed the structure could only be attacked by damp from below, as is shown by the fact that the flooring and lower portions of the house were in an advanced stage of decay while the upper portions were well preserved. An interesting evidence of the importance of the persons interred in this tumulus is the labour expended on the provision of stones for its construction, because, since the neighbourhood of Leubingen is practically stoneless, this material had to be transported many miles—the various kinds of stone coming from different districts.

We must now consider the grave-goods found with the skeletal remains in the mortuary-house.

At the left side of the male skeleton and near his feet were found the fragments of an urn which has since been restored. The urn when found was surrounded by a setting of stones. When restored the vessel was found to have a height of 39·5 cm. and a breadth of 38 cm. measured at a height of 16 cm. The neck, which is marked off from the body of the urn by two incised lines, has a polished black surface, while the body is brownish-red, rust-coloured, and is marked by a pattern of finger-markings which run parallel to each other diagonally over the surface leaving intermediate high ridges. Two small ears span the border between body and neck of urn. Further fragments were also found and are believed to be remains of vessels used at the funeral feast. These also show careful polishing on a fine clay slip of black or red colour, and exhibit further the out-curved neck and the ornamentation of lightly incised lines or rows of dots.

Opposite the urn lay a hone, 21·2 cm. long, 6·9 cm. broad, and 3·4 cm. thick in the middle. Near this was laid a stone adze of serpentine, 30·8 cm. long. The direction of the boring, its narrow diameter, and the fact that tracings of the fastenings were recognizable when the implement was found, enable the method of mounting to be reconstructed with tolerable certainty, and show this method to have been a very interesting one. According to Klopfleisch the hole was intended to receive a wooden peg, which held in position two side pieces, which were then fastened to the wooden handle, and for further security the whole was bound round, leaving the marks shown in Klopfleisch's drawing.[1]

The handle of the implement must have rested towards the right hand of the male skeleton as also that of the halberd, the blade of which was placed near the adze. The blade of the halberd is 20·7 cm. long, 6·6 cm. broad, and has a well-marked mid-rib. The latter is ornamented at the broader end by two triangles of parallel incised lines. It is interesting to note that the point of the halberd is not sharp, and that the edges are less sharp than those of the dagger found with it.[2] The marks of the wooden shaft are clear in the oxydized surface of the weapon, and show that it was hafted as a halberd and not as a dagger. They show further that the blade was not set at right angles to the shaft, but formed an obtuse angle therewith. Only one half of one of the three rivets which fastened the blade to the shaft is now forthcoming, but from this rivet, and from a drawing by Klopfleisch, we find the thickness of the shaft to have been 2·5 cm. The rivets had high domed heads. The wood of the shaft is considered to have been white-thorn.

Lying across the halberd was found a dagger-blade, while the others were found crossing each other near the knees of the skeleton. The three blades were in length, respectively, 12·6 cm., 11·6 cm., and 8·5 cm. All showed, when found, remains of the wooden shafts, and, on the second largest, part of the handle with a winding of broad bronze wire was recognizable. The dagger-blades were found to have had sheaths, one of oak-bark, the others of leather. The two larger had handles of whitethorn; that of the smaller was of ash.

Near the right foot of the skeleton lay two bronze axes with low side-flanges, their lengths being, respectively, 14·2 cm. and 13·8 cm. The former has a very faintly marked stop-ridge.

Near the axes, and in such a position that their shafts must have reached near to the right hand of the skeleton, were found three bronze chisels. There is a doubt in Höfer's report as regards the hafting of these implements. Höfer believed all three were hafted, while Klopfleisch thought that both ends of each were used (for boring stone, he suggested). The probability seems to be that the largest, which has one blunt end, was hafted, as also was the smallest which had a tang (now broken) at one end, suggesting such a purpose, and was, in any case, shown in a wooden handle in a drawing by Klopfleisch. The third, medium-sized, has a sharp edge at both ends, and would seem not to have been permanently hafted, though one might suggest that during use either end could have had fitted to it a wooden or bone sleeve. The lengths of the three implements are 20·6 cm., 15·3 cm., and 8·1 cm., respectively, and if our supposition that two were hafted is correct we find that the working end of each expands to a curved edge, the expansion reminding one of a modern screw-driver, but the curved edge being unlike that of a chisel makes it possible that Klopfleisch was correct in suggesting their use for boring—the material on which they were probably used being, however, wood, and not stone. The grave-goods, taken as a whole, suggest the worker as well as the warrior, and, like the grave-house itself, further point to a tradition of wood-working.

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[1] Höfer, 18, suggests a similar method of mounting the copper double axes.

[2] Höfer, nevertheless, argues against the ceremonial use of the Leubingen halberd and contrasts it with the Diskau ones.

We must now consider the objects which the excavators found with the upper skeleton, which, it will be remembered, was that of a child of about ten years of age. At the point where the skeletons crossed were found two pins (10·1 and 9·8 cm. in length respectively) of gold. Each is of the bent type,[1] with eye-heads and with zig-zag ornament on the upper portion. The type is characteristic of the later portion of the Aunjetitz culture.[2]

Another gold ornament was a spiral roll of gold wire, 2·4 cm. long, outer diameter 0·5 cm., inner 0·28 cm. The wire is 0·8 mm. in thickness.

The finest of the gold objects was a massive oval arm-ring, the outside measurements of the axes being 8·45 and 7·1 cm., the inner being 6·75 and 5·35 cm. The inner surface, which in wearing would not be seen, is plain, while the outer is deeply fluted, giving a design of six grooves and five broad ridges, each alternate ridge being ornamented with diagonal grooving.[3]

Finally were found two gold finger-rings constructed from wire of 2½ mm. thickness. The rings are so constructed that when one turn of the wire is almost completed it is brought back in the opposite direction, making two further turns. This, as Höfer points out, has the effect of showing, when the ornament is worn on the finger, three turns of the wire on the outside, while only one passes on the inside of the finger.

Obhausen, Kreis Querfurt (fig. 11).

As an addendum to his account of the Leubingen tumulus Höfer gives details of other burial-finds of the same period and area. Among them he deals[4] with a halberd and a small handled-pot which, in the Catalogue of Halle Museum, are (under the numbers 2307 II and 2308 II) described as from Obhausen, Kreis Querfurt, no further information being there given beyond the fact that they were purchased in 1885 from Potzelt, a Halle merchant. Höfer is satisfied that there is sufficient evidence to justify the assumption that the two objects were found together, but he doubts the authenticity of the given find-place, and suggests as an alternative that the objects in reality came from the large tumulus of Nienstedt, giving as his ground for this opinion the fact that the finds from the tumulus in question were so meagre in comparison with the size of the monument. He is of the opinion that the objects actually found during the excavation were removed by the workmen unknown to the director of the excavation (Klopfleisch), and later found their way to the Halle Museum in a circuitous manner. A bronze flanged axe of constricted form was also sold in 1885 by the same person to Halle Museum, and Höfer makes the further suggestion that this also came from the Nienstedt tumulus. All this is, however, surmise, and nothing can now be done to prove or disprove it. We may, however, accept the supposition that the halberd and the pot were found in association, and shall now give a short description of these objects.

[1] Of the kind known in German as *Böhmische säbelartige Ösennadel.*

[2] Seger in Ebert, i, 263.

[3] The Merseburg arm-ring, Montelius, *Die Chron.* 42, fig. 107, is the only close parallel.

[4] *Jahresschrift für die Vorgeschichte der sächsisch-thüringischen Länder*, v (1906), 89.

The halberd is 23 cm. in length and 9·5 cm. in breadth. It is supposedly of copper,[1] and has a well-developed mid-rib. It has three rivets (2·2 cm. in length), with flat hammered heads, and a further semicircular space, as for a fourth, on the edge. It shows the mark of the haft, and was clearly fastened thereto at an obtuse angle.

The pot (of dark grey material) is 6·7 cm. high. It has an S-profile, with the handle close under the rim, and is of a rare Aunjetitz type. Höfer mentions the finding of a similar pot at Altenbeichlingen, Kreis Eckartsberga, together with a beaker showing cord ornamentation.[2] This seems to give confirmation to Childe's theory of the coming together of the Aunjetitz culture and the Corded Ware people.

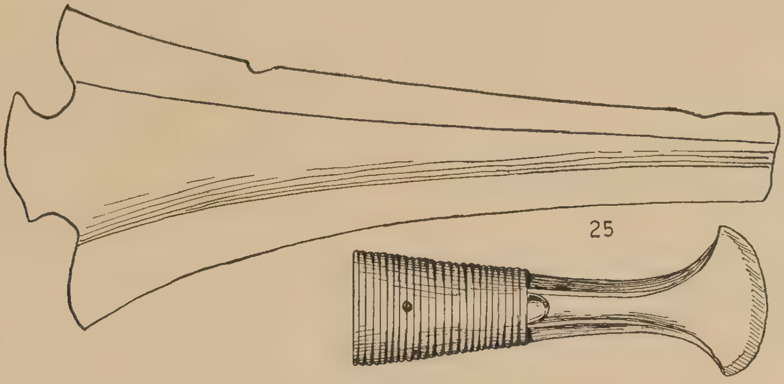

Fig. 12. Cöthen (after Bethge)

Cöthen (fig. 12).

One of the most interesting of the Continental finds is that from Cöthen in which a halberd occurs in association with a hybrid type of bronze axe, the latter being an object that caused considerable difficulty to the writer who first brought the hoard to scientific notice,[3] because, as he remarked, there are united in it quite early and late forms. The halberd is of the type to be noted in the Diesau hoard and elsewhere, and is such as might have been attached to a metal handle. The axe is clearly the result of copying, in the casting of the weapon, a flanged axe bound by wire to its wooden haft. The lower part of the weapon is still in the form of the simple slightly flanged axe, but the wire binding has become a residual feature cast on the upper part of the axe, and forming merely an ornament on the outside surface of the socket. A rivet-hole shows the manner in which this axe was fastened to the handle. Of particular interest is the fact that the craftsman cast not only the imitation of the wire binding, but also of the lower projecting ends of the split wooden haft, such as they would appear on the prototype. This example brings under consideration the whole question of the evolution of the socketed axe, which has been for so long regarded as having followed the typology represented in the well-known figure in the Bronze Age Guide of the British Museum.[4] The evolution there given, however, does not really represent the actual course of development of the weapon in any country, and the Cöthen example shows how different from it this development actually was.[1] Nor is the Cöthen axe the only evidence showing the development directly from the flanged to the socketed type; Kossinna figures several other axes, while again there are still further examples in various Scandinavian museums. Professor Jacob-Friesen has realized this development, and shows the various ways in which the axe developed:[2]

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[1] Höfer, *op. cit.*, 90.

[2] *Op. cit.*, 90, footnote.

[3] Bethge in *Mannus* iii (1923), 42: 'Das Tüllenbeil macht uns allerlei Kopfzerbrechen.'

[4] 1920 ed., 26.

> (i) by the introduction of side flanges and stop-ridge it developed to the palstave, which did not develop further, being indeed itself a very serviceable weapon;
>
> (ii) from the flanged axe with wire binding, to the socketed axe of long narrow type, and then to the normal type of socketed axe of shorter and broader make;
>
> (iii) from the flanged to the winged axe from which it is possible the socketed axe also developed. It is also possible that the casting of ornaments in the form of residual wings on some socketed axes may merely represent the influence of the winged axe on the socketed form, and need not be taken as being, to any real extent, evidence that the socket developed from the coalescing of the wings.

All this is of interest in regard to the question of the date of the association in which we find the Cöthen halberd, since it is important that we bear in mind that we have to do here with an axe in the direct line of evolution, and not, as may be suggested, a 'freak' which did not lead to further development. The important point in connexion with the matter is that the socketed axe developed directly from the flanged axe of Northern Europe, and that if we regard the socketed axe as late we must regard a hybrid example such as we have here to deal with as being only slightly earlier; that is to say, that if we regard the socketed axe as of late Bronze Age date we must regard the Cöthen axe as late in middle Bronze Age times. This is made the more evident when we remember that the long narrow flanged axe of Northern type was made the starting-point of various experiments as well as that which led to the evolution of the socketed axe. We notice this in the example in the figure from Ebert,[3] which shows a palstave also quite evidently developed from the flanged axe, and also showing in its ornament the influence of the binding of the earlier weapon. We must bear in mind in this connexion that the Western European type of palstave occurs in Northern Germany and Scandinavia as a result of Western (Atlantic) influence only, and can readily be distinguished from the native type of long narrow outline, out-curving towards the cutting-edge.

Kossinna doubts the association of the two weapons because he places the axe late in the second period of the Bronze Age (II *b*, and more probably II *c*), while he holds that halberds belong exclusively to the first period, and cannot therefore regard it as possible that two periods not chronologically consecutive should be united in a single find. However, Bethge, who exhibited the find, felt that the association might be taken as correct.[4]

The dimensions of the halberd are not given in the account in *Mannus*, but those of the axe are: length, 16·25 cm., and 5·56 cm. in breadth at the edge.

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[1] Discussed by Kossinna, *Mannus* iii (1923), 55.

[2] Chart in Hanover Museum.

[3] ix, pl. 108 f.

[4] 'Die Fundumstände sind nicht ganz klar, die beiden Bronzen scheinen aber doch zusammen zu gehören.'

Dieskau, Saalkreis (fig. 13).[1]

In November 1904 there was found near the village of Dieskau at a depth of $\frac{3}{4}$ m. a large earthenware pot without a cover, in which was a large hoard of bronzes and amber.

It was found that in the burial of the hoard the greatest care had been exercised, the objects having been packed in the vessel so that they fitted as closely as possible, and all available room was utilized to the utmost. The amber had been laid at the bottom of the pot, and over this had been placed the bronze rings and other small objects, and on the top the halberd-blades and halberds with metal shafts. Wooden shafts had evidently not been attached to the halberds when they were buried.

Only one piece of the vessel remains, and though this is large, it is not sufficiently large to allow of a reconstruction of the pot.

Förtsch, who reports on the find, examined the neighbourhood of the discovery, but beyond finding two hearths, a hone, and a saddle-quern, no additional details which would throw light on the nature of the hoard are given, nor is it clear whether these last-mentioned objects are connected with the hoard or not. We may take it as fairly certain from the nature of the hoard that we have to do here with a trader's wares.

In describing the articles we shall follow the more detailed description given by Förtsch:

Axes.—Two kinds of axes are represented in the hoard: there is one example of the flat axe with low side-flanges, and there are two of the long narrow type with perforation for the haft. The former is possibly the most interesting single object in the hoard because of its being unmistakably of West-European type. Indeed, it is such as could be exactly paralleled in Irish and British examples, and there can be little doubt that it is an importation to Germany from these islands.

This axe is 13 cm. long and 6·50 cm. broad at the cutting-edge. It is ornamented with the stroke ornament so common on these axes in Ireland and Britain. It has slight side-flanges, and it is thickest in the middle and tapers towards the edge and towards the butt-end, this thickest part thus being the junction of the two sloping portions, and acting as a stop-ridge.

The shaft-hole axes (to use Childe's term—*Schmaläxte* in German) are 30·50 and 30·60 cm. in length respectively. The shorter axe is in good preservation and is ornamented with raised lines. The shaft-hole is elliptical, and is placed so as to divide the weapon into two unequal parts. The ends show the weapon to have been buried in a new and unused condition.

The other axe is not in as good condition, but is in most details similar to the first except that the arrangement of the ornamental ribs is different.

Amber.—The number of amber beads in this find is over 120, and the shape and size vary considerably. Some are spherical, some are small flat pieces of 10–25 mm. in diameter, and there is a double-conical cask-shaped bead 12 mm. in length. Some axe- or wedge-shaped forms are perforated along the length. There are a few pieces and some fragments which are bored not along the length but across the breadth. Förtsch holds (no doubt correctly)[2] that the amber in the hoard is succinite, and of northern origin.

---

[1] *Jahresschrift für die Vorgeschichte der sächsisch-thüringischen Länder*, iv (1905), 3; Jacob-Friesen, *Zur Prähistorie Nordwestsachsens*, 1911, 188 f.

[2] See J. M. de Navarro in *Geographical Journ.* lxvi (1925), 482.

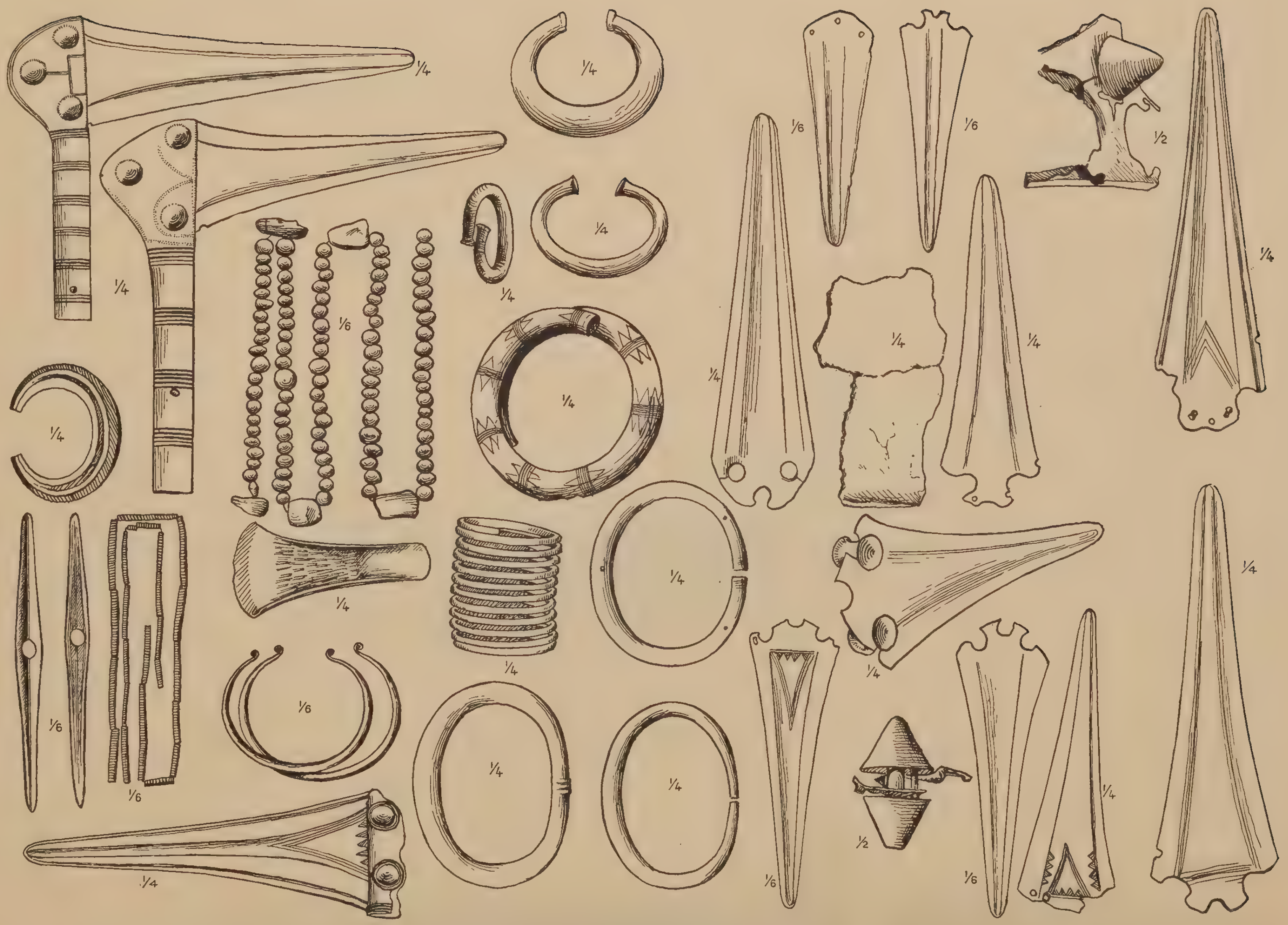
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Fig. 13. Dieskau, Saalkreis (after Förtsch)

Arm-spirals.—Two cylindrical bronze arm-spirals contained in the hoard are 7 cm. in height and in diameter, and consist of 13 and 11, respectively, windings of a narrow bronze band (3–4 mm. in breadth) of elliptical cross-section.

Spiral-rolls.—These bronze spiral-rolls, characteristic ornaments of both early and late Bronze Age, and probably to be regarded as hair-ornaments, were found to have been strung together with stems of the wild hops which left in the oxydized surfaces a mark which made possible the identification of the plant. The length of the individual rolls varies between 3 and 7 cm., while the diameter of half is about 5 mm. and of the other half 3 mm. There is a total of 23 rolls.

Bronze-rings.—There are ten open neck-rings of bronze with tightly rolled spiral ends, and of elliptical form. Their weights vary from 205 to 250 grammes. Förtsch remarks that it has been suggested that such rings may have served as coinage. He gives, however, evidence of the method of wearing as a neck-ornament from a grave-find in which such a bronze ring was found on the neck of a skeleton.

Anklets.—Of massive bronze rings which Förtsch holds to have served as leg-ornaments there are three types. Four are closed elliptical rings, their individual weights varying from 470 to 635 gm. They are ornamented with three raised ribs on the portion of the ring where in the other types the opening occurs. Two other rings are slightly open (to the extent of 2·50 mm.) and are ornamented near the open ends with five parallel lines. The final two examples are also slightly open, but increase in diameter from the heaviest part which is farthest from the opening towards the ends near which the diameter is least. At the ends themselves there is a slight swelling of the metal.

Arm-rings.—There is a total of nine arm-rings of which six are open rings with expanded ends, another is somewhat similar but heavier, one is of faceted cross-section and decreases towards the ends, while one is similar to the first six, but being smaller must have belonged to a child.

In connexion with these rings Förtsch points out that they belong on the whole to the first period of the Bronze Age but he quotes Kossinna[1] as to the fact that the faceted type lives on to the second period in Bohemia and Hungary.

Halberds.—Of halberds, with or without metal shafts, a total of fourteen examples is listed.

Two of the halberds have metal heads and shafts which have been cast in one piece with the blades. The rivets are therefore merely residual features. The lengths of the shafts are, respectively, 21·50 cm. and 26 cm. In both weapons there is an upward inclination of the blade as is to be noticed in so many halberds. The third halberd has a partly destroyed head and since the fragments have not been found in the vessel the weapon must have been put away in its broken condition. In this case the head of the metal shaft is separately cast and is fastened to the blade by two conical-headed rivets, the heads of which are not in the same axis as the shafts of the rivets. Förtsch holds that this is due to the fact that the maker had before him a halberd which he copied as regards the position of the rivet-heads, but since the position of the rivet-holes did not quite suit this it necessitated the asymmetrical arrangement of the rivet-heads to cover up the discrepancy. Fragments of wood (which were not identifiable) were found in the bronze fitting, and, since this timber shaft had of necessity to be very thin, Förtsch is correct in saying that we cannot regard the halberd as a practical weapon. The fourth halberd shows still more clearly this same unpractical character. Förtsch suggests that the blade originally belonged to a dagger and was adapted to its new use as a halberd by causing the small rivets to connect with the large conical heads which held together the blade, wooden shaft, and thin bronze sheath which covered the latter.

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[1] *Zeitschrift für Ethnologie*, xxxiv (1902), 191.

In addition to these examples there are also ten blades somewhat varied in their forms and still more varied in the nature and arrangement of the provision for rivets. Some have got large holes for heavy rivets, others have small ones only, while still others have both large and small rivet-holes. The larger holes are in some cases complete; in others they are on the edge of the blade so as to form a semicircle or three-quarters of a circle. The mark of where the blade joins the shaft is, on some of the blades, at right angles to the axis of the blade, and, on others, slantingly across it. The length of the blades varies from 22·50 cm. to 30 cm.

Pustohl, Amt Buckow, Mecklenburg.[1]

From the above find-place comes a small hoard consisting of a halberd and a bronze arm-ring. The upper part of the handle of the halberd is of bronze and is cast as one piece with the blade. The lower end of the handle is missing, but we are informed that the upper part of the shaft had been attached to the lower (not available) part by means of a wooden peg which remained in position inside the shaft. The arm-band was of the broad type with horizontal ribs. It is described by Montelius as similar to another figured in his paper. Lisch points to the similarity between the Pustohl halberd and those from the same neighbourhood, at Blengow, Glasin, and Hansdorf, and suggests that these all come from the same workshop, a suggestion to which weight is given by the fact that all the examples come from within a radius of about two miles.

Stubendorf bei Gnoien (*neighbourhood of Dargun*), *Mecklenburg* (fig. 14).[2]

In a bog at the above place was found a number of bronze antiquities, and, though we have a note that these were not found at the same depth and though there is not a certainty that the whole represents one hoard, they are treated together in his list of hoards by Montelius.

The objects in question consisted of:

(*a*) Three bronze arm-bands of the broad ribbed type (such as the one in the Pustohl find) with 13, 14, and 20 horizontal ribs, respectively. The ribs of one of the armlets are ornamented with diagonal markings.

(*b*) A necklet or armlet which is quite simple and not ornamented.

(*c*) Five daggers which were stuck into the arm-bands. The points of the daggers were found pointing upwards and they are of the type in which handle and blade are cast as one piece; four have oval, and one—the smallest—a rectangular handle.

---

[1] Montelius, *Die Chron.* 50; Lisch, *Mecklenburger Jahrbuch*, xxix, 151.

[2] Montelius, *Die Chron.* 48, with other references; Beltz, *Die vorgeschichtlichen Altertümer des Grossherzogtums Mecklenburg-Schwerin*, 155; also entry in Catalogue of Römisch-Germanisches Central-Museum, Mainz, where casts are preserved.

(*d*) About a foot deeper than the daggers was found a halberd. The handle was found to contain the core used in casting, which was composed of clay or of sand and clay. The three inches at the upper end of the halberd were free from this clay core and were found to have contained a wooden peg which served to hold the handle to the upper part of the shaft, which in turn was fastened to the separately cast blade by two strong rivets.

(*e*) An axe with low side-flanges was also found, but it is not known at what depth. It proved to be red—as of copper—in colour, as was also the necklet; and Montelius supposes these pieces to have been of bronze of a poor tin content. The other pieces were of a brown colour as is usual with finds from bogs.

Lisch[1] mentions that the pieces of the halberd were found in different places. He states that it is certain that the upper end of the weapon with the blade was found, as stated above, about a foot deeper than the daggers but that the piece from the lower end was found in the neighbourhood in the bog while the remaining fragments were found in the cast-out mould.

The figure of one of the daggers which I reproduce is from the Catalogue of the Römisch-Germanisches Central-Museum in Mainz where replicas of some of the objects are exhibited.

Meckenheim (fig. 15).

During agricultural operations at a place about 3 km. south-west of Meckenheim on the north of the Ludwigshafen–Neustadt road an interesting find was made by one of the workers: it came later to the Pfalz Museum at Speier, and is dealt with in a very useful paper by Reinecke.[2] The hoard was found in a hollow in the ground filled with black soil and of about $\frac{1}{2}$ m. diameter. It consists of five pieces, showing a patina of dark and light green and partly lightly encrusted with yellow clay. The objects represented are: a halberd, two axes (one much larger than the other), and two fragments of a bronze neck ornament (Halsberge). The last-mentioned two fragments may belong to one or to two ornaments.

The objects have been analysed and the following table shows the resulting percentages :—

	Halberd.	*Large axe.*	*Small axe.*	*Neck ornament.*
Copper	91·10	90·90	92·90	91·00
Tin	7·32	7·62	5·61	7·78
Antimony	0·86	0·67	0·83	0·98
Lead	trace	0·28	—	—
Iron	trace	trace	trace	trace
Nickel	0·05	0·01	trace	0·02
Phosphorus	0·01	0·03	0·03	0·02

The halberd, of which only a fragment remains, is of the large heavy type with well-developed mid-rib, and had, Reinecke suggests, three rivet-holes. The weapon in question is important because it adds to the small number of South German halberds, a list of which is given in the article quoted. The fragment to hand has a length of 12·3 cm.

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[1] *Meckl. Jahrbuch* (1860–1), 138.

[2] *Germania*, xvi (1932), Heft 4, 267.

The larger axe is of a heavy type, not cast with side-flanges. Its present length is 13·3 cm., the maximum breadth, 6·05 cm. Reinecke remarks on the existence of a flat cross-ridge which he says is similar to those on Irish axes of the same type.

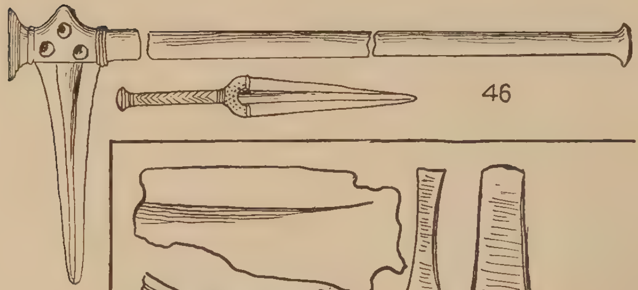

Fig. 14.

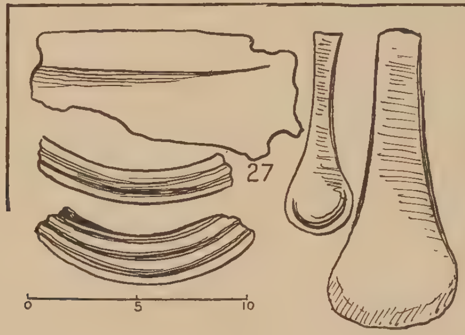

Fig. 15

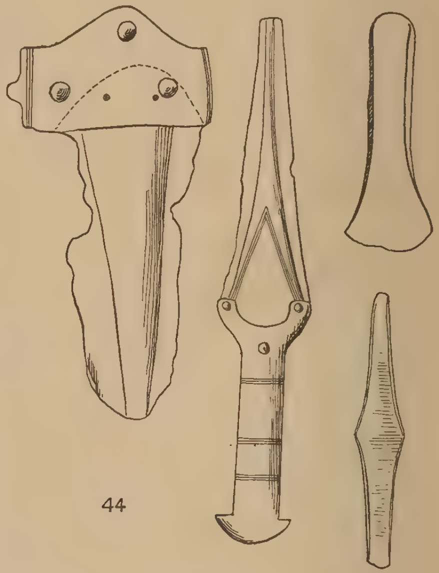

Fig. 16

Fig. 14. Stubendorf. Fig. 15. Meckenheim (after Reinecke). Fig. 16. Kuttlau, Kr. Glogau ($\frac{1}{3}$)

The smaller axe (length 9·1 cm., maximum breadth 3·15 cm.) has side-flanges and a rather spoon-shaped outline. Reinecke believes that it is really part of a larger weapon and that the original was much longer, its present form being due to secondary usage.

The neck-ornament fragments are 9·8 cm. and 8·9 cm. long, respectively, and are so made that the ribs (three on one fragment: two on the other) are cast in the solid, the back of the bronzes being flat. It is not possible to say if they belonged originally to one or to two ornaments. Reinecke points out that this is the first time that a *Halskragen* has been found in an early Bronze Age context, and it must also be remarked that he holds that the find as a whole must be regarded as early in early Bronze Age times and not belonging to the end of that sub-period as do the greater number of the finds proper to this division of the Bronze Age. He further suggests that this type of neck-ornament is a development from the earlier type in which a number of separate bars are incorporated and are united by long rivets at the ends,[1] and that the finding of the developed type in an early Bronze Age context at Meckenheim shows the development to have taken place in Southern Germany, the spread of the later solid type having taken place from there.

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[1] As in Montelius, *Civil. Prim. en Italie*, i, b, pl. 4, fig. 9.

It may also be suggested, however, that this argument is in favour of a late dating for the find as a whole, and the mere finding in it of two axes of early type is not sufficient to make it a certainty that the hoard belongs to an early part of the early Bronze Age. This is particularly the case since the axes have both been subject to secondary working. Time for the development of the solid type of *Halskragen* must be allowed even if we admit that we are dealing with an example from the region of origin of the type.

Kuttlau, Kr. Glogau (fig. 16).

The account originally given regarding this find of four bronze objects stated that the hoard was discovered in a large urn which was covered with stones and was surrounded by smaller vessels. It was further stated that the find-place was well known as a place where many urns had been found. This account was given orally in connexion with the objects which had come into the possession of the Museum für Vorgeschichte in Berlin, and is quoted by Seger[1] who, however, doubts the details given and discusses the matter at length. He remarks that while the find-place, the so-called *Butterberg*, is well known as productive of articles of archaeological interest, the finds which had so far come to light there were of early Iron Age date; and early Bronze Age antiquities had not hitherto been represented. Seger points out that the description of the grave as given in the account quoted fits in well with that of an urnfield grave, but, since this implies cremation which must be dated at a later period than the Kuttlau objects, the account of the find cannot be accepted as correct, though it fits well for the majority of the discoveries from the *Butterberg*. After a somewhat lengthy discussion Seger suggests that the find probably represents a grave-offering with a burial under a tumulus of the type of the Leubingen tumulus.

The objects represented in the find are:

(*a*) A halberd of bronze poor in tin which has three ornamental rivets, the real rivets being small and asymmetrically placed. The length of the preserved portion is 18 cm. The type is, Seger points out, of Hubert Schmidt's class (IIa) of which the only hitherto known example was that from Bethkenhammer, Kreis Deutschkrone, Westpreussen.[2] The weapon from Kuttlau is similar to the other to such an extent as to suggest that both come from the same place of manufacture.

(*b*) A dagger, with bronze handle, the length of the portion which remains being 22·3 cm.

(*c*) A flanged axe of the usual type with in-curved sides; length 10 cm.

(*d*) A chisel of the type of that found at Leubingen.

Seger suggests that the find was a grave-offering and reminds us that there is no other example of so rich an offering in Silesian early Bronze Age graves. He sees in the find a parallel to the grave-finds of Middle and North Germany and suggests that it may have been originally covered by a tumulus and that the whole is due to Northern influence in the area.

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[1] *Götze-Festschrift*, 84–9; *Alt-Schlesien*, iii, Heft 1, 5.

[2] I remark further on this in dealing with typology.

Neuenheiligen (fig. 17).

In 1776 a large hoard of bronzes was found near Neuenheiligen during agricultural operations. The hoard has been dealt with by various writers, but the list published by Montelius[1] is the most complete and is as follows:

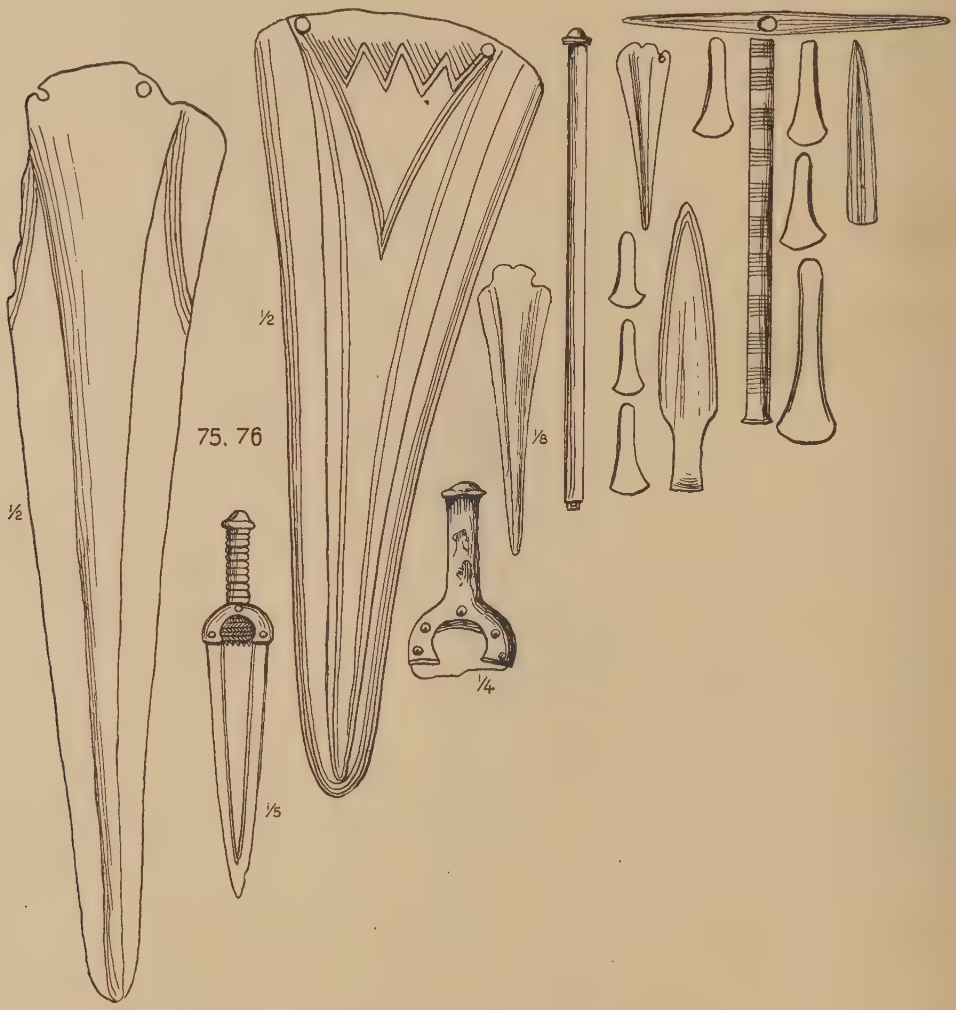

Fig. 17. Neuenheiligen (unmarked pieces of various scales)

(*a*) one large and about sixty small axes with low side-flanges;

(*b*) a double-edged axe with a shaft-hole in the middle from rather pure and unmixed copper;

---

[1] *Die Chron.* 41. A full list of references is given. The objects from the hoard in the British Museum are reproduced in Childe, *Danube*, fig. 143.

(*c*) two hollow-cast long bronze halberd-shafts; the one quite plain with round bottom terminal, the other ornamented with transverse bands;

(*d*) four broad dagger-blades, two of which probably belong to the above-mentioned halberd-shafts. Three are raised in the middle to a flat surface, broad at the upper end, narrowing towards the lower and ending as a ridge at the point; the fourth is raised to a ridge in the middle. One of the first-named has triangular ornament, another still shows traces of richer linear ornament in triangles and parallel lines on all parts; one, two, or three rivet-holes;

(*e*) two smaller dagger-blades;

(*f*) a dagger with handle cast in one piece; seems to be the imitation of a flint dagger. On the edges of the handle is an ornamentation of triangles, their bases outwards; on the blade, however, a double groove runs parallel to the edge;

(*g*) a dagger with bronze handle on which the separately cast blade is fastened with three rivets;

(*h*) the bronze handle and upper portion of a blade of a dagger of Italian form;

(*i*) a second dagger-handle with broken-off blade.

It must be remarked that the four blades mentioned at (*d*) above are of the type of which it is very difficult to say if they are halberd- or dagger-blades. The probability seems to be, however, that Montelius's suggestion is correct that two are halberd-blades (these are the two outer ones at the top of the plate, fig. 143, in Childe's *Danube*).

Canena (fig. 18).

This hoard is a particularly well-known one because of its having been treated in Hubert Schmidt's article,[1] and consists of two pieces only—a dagger and a halberd. The former has a blade of triangular outline which is attached to a separately cast hollow bronze handle. The dagger has a length of 32·6 cm. and a maximum breadth of 7·1 cm. The blade has a flat middle-rib which runs parallel to the sides and is ornamented on the upper end with a design of incised lines in the form of a triangle. The handle is of elliptical cross-section and has at the upper end an oval plate which has on its flat surface an ornament of incised lines forming a herring-bone pattern that runs parallel with the edge.

The halberd has a blade of similar form to that of the dagger, and this is fastened to the shaft with three conical-headed rivets. The rivets each fit in a niche of semicircular or three-quarter circular outline cut at the edge of the base of the blade. This can be ascertained because one can see the end of the blade through an opening at the back of the top of the shaft. The lower part of the shaft is oval in cross-section and was evidently intended to hold a wooden handle, as is shown by two holes which must have kept in position a pin for the fastening of such. This wooden handle may have been a completion of the shaft or it may have served as an inner fitting to which was attached a further portion of a hollow bronze shaft. The shaft has a length of 23·6 cm., and the visible part of the blade has a length of 27·4 cm. Ornament of bands of herring-bone pattern are found on the shaft.

Details of the find are not available, and Schmidt remarks that there is no indication whether the pieces belonged to a grave-find or to a hoard, but that they were found in association he takes as certain.

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[1] *P.Z.* i (1909), 113.

Gross-Schwechten, near Stendal, Altmark (fig. 19).

In the Museum für Vor- und Frühgeschichte in Berlin is preserved a hoard of three halberds and the ferrule for the staff of one such weapon. No further information regarding them is given in the Museum catalogue, but Montelius[1] states that the hoard was obtained in a pottery vessel found under a fallen pine-tree. The vessel was covered with a granite stone and contained :

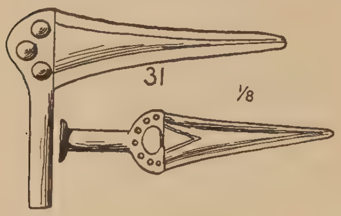

Fig. 18

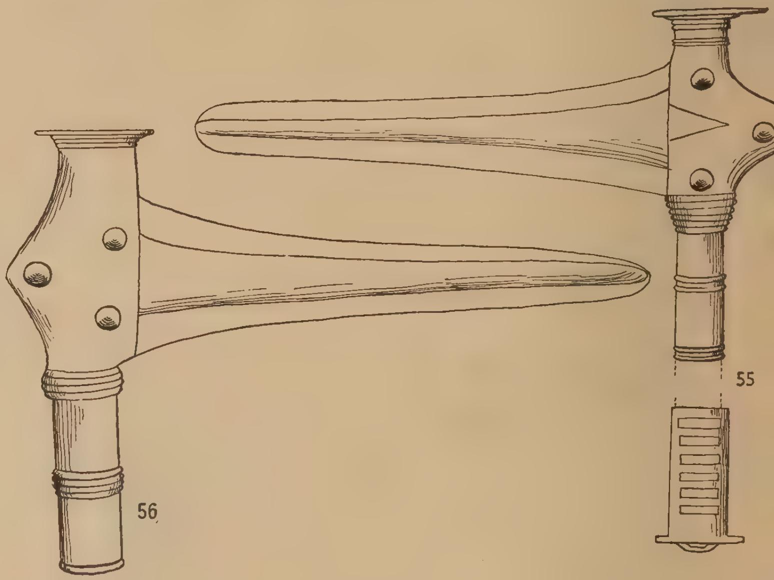

Fig. 20

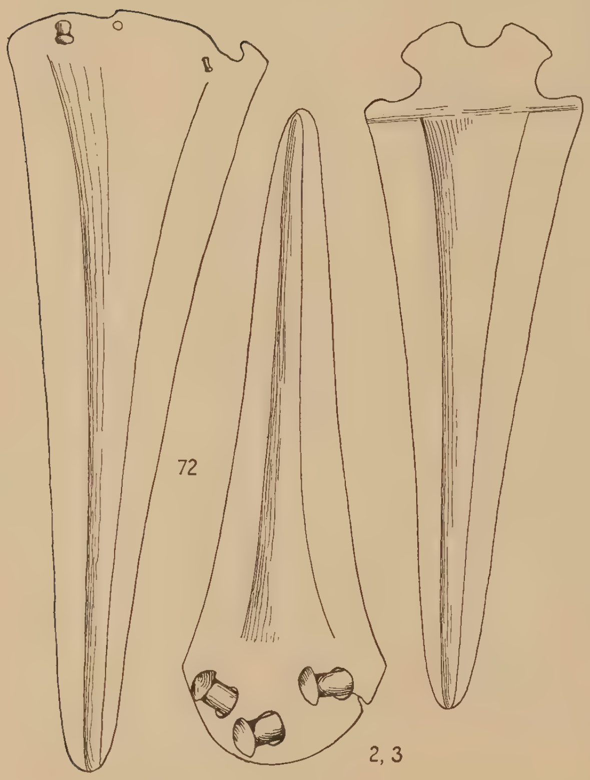

Fig. 19

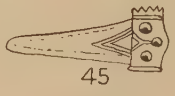

Fig. 21

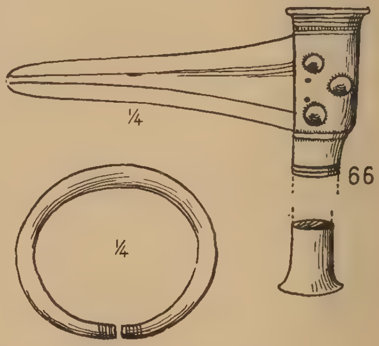

Fig. 22

Fig. 18. Canena. Fig. 19. Gross-Schwechten ($\frac{1}{3}$). Fig. 20. Schmöckwitz ($\frac{1}{3}$). Fig. 21. Langenstein (after Krone). Fig. 22. Schroda, Posen

(*a*) 10 blades of halberds. The mark of the handle is to be seen crossing the blades and is on some very oblique. One of the blades had an ornamentation of triangular incised lines. The rivets are of two types—thin with large conical heads and thick with heads not so large in proportion to the size of the rivet. The former were probably used with metal, the latter with wooden shafts;

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[1] *Die Chron.* 43, and figs. 115, 116, 117, 118 ; *P.Z.* i (1909), 117.

(*b*) 4 ferules for the ends of the wooden halberd-shafts.

All the objects were of bronze. The analysis of one of the blades gave as a result 84 per cent. copper, 15 per cent. tin, and a small quantity of lead and silver. The analysis of a rivet gave 95·5 per cent. copper and 4·5 per cent. tin.

One of the Gross-Schwechten halberds having large rivets certainly had been attached to a wooden haft; the one with two rivets (one small and one somewhat larger) we may suppose to have had a metal handle; regarding the third it is difficult to be certain as to the nature of the handle since only the semicircular openings on the end show the position of the rivets, none of which is available. The analogy of the Canena example (where Schmidt noted three-quarter circular openings at the base of the blade) shows that such blades were sometimes mounted on metal hafts, while the one from the Dieskau hoard with heavy rivets shows that the same type was attached also to wooden handles.[1]

Blengow, Amt Buchow.[2]

Three halberds with bronze shafts were found in 1808 in a bog at the above place. No other objects were, however, found with them.

Schmöckwitz, Kr. Teltow (fig. 20).[3]

At a depth of about three feet there were found here in the neighbourhood of the river Spree two halberds of which the upper portions of the shafts are of bronze. A number (17) of bronze rings obviously intended as mountings for the wooden handles and a bronze ferrule were also found. The latter is the most interesting object in the hoard because of the open-work ornament it exhibits—a type of ornament which occurs at the earliest in Period II of Montelius's scheme.

Langenstein, south of Halberstadt (fig. 21).[4]

The blade and upper metal portion of a halberd was found with a very thick open arm-ring of bronze or copper.

Schroda, Posen (fig. 22).[5]

A similar find to the one from Langenstein comes from Schroda. The blade of the halberd is held in the metal shaft-head by means of two small rivets, there being also three non-functional rivets with conical heads. The ferrule of the wooden shaft also remains. The arm-ring is heavy in type, and the ends are ornamented with parallel incised lines.

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[1] In the list of German halberds I have treated such doubtful examples as belonging to Class I (with wooden hafts).

[2] Montelius, *Die Chron.* 28, with references.

[3] *Ibid.* [4] *Ibid.* 43. Illustration in Krone, *Vorgeschichte des Landes Braunschweig*, 73.

[5] *Deutsche Anthropologische Gesellschaft, XL. Hauptversammlung in Posen, August 1909.*

Granowo, Kreis Gratz, Posen (fig. 23).

A large hoard of bronzes was obtained in 1885 in the course of agricultural operations. The total number of objects is given by Montelius[1] as twenty-one, but Kostrzewski[2] shows, in addition to those, further objects bringing the total to twenty-nine.[3]

Combining the various sources we see that the find consisted of:

(*a*) 2 axes with very low side-flanges;

(*b*) a broad dagger with a separately cast bronze handle to which it is attached by two rivets, there being also three ornamental rivets. The blade is ornamented with one large and a row of small triangles of punched lines. The weapon is of Italian form, but the ornamentation is scarcely so fine as in Italy;

(*c*) 2 similar daggers with bronze handles, each cast in a single piece and having false rivets only. There are no ornamental incised lines and the daggers appear to be Northern copies of Italian prototypes;

(*d*) 2 large daggers or very short swords with broad blades and separately cast hollow handles. The blades are ornamented in a manner similar to that described under (*b*) above;

(*e*) a broad dagger-blade with curved punched ornament on one side;

(*f*) 2 halberds. One is described by Montelius as having the upper portion of the shaft of bronze. The separately-cast blade is ornamented as (*b*) and is attached to the shaft by means of two small rivets, there being also three ornamental conical rivets (1·5 cm. high). The other halberd is described by Richthofen as having a triangular head and is figured by Kostrzewski;

(*g*) 4 neck-rings with re-curved ends;

(*h*) 4 open arm-rings, the tapering ends ornamented with cross-lines;

(*i*) 5 massive oval arm-rings also open and without ornament;

(*j*) to these must be added seven other (presumably arm-) rings figured by Kostrzewski.

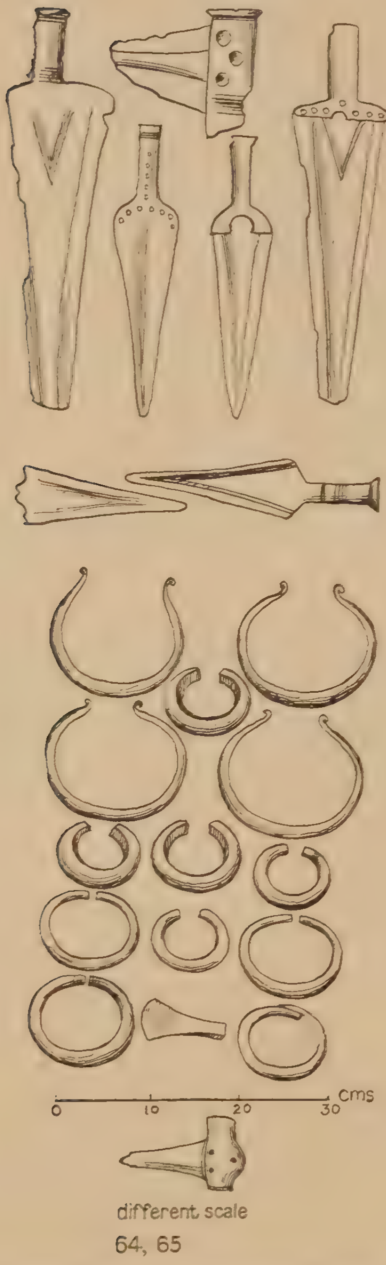

Fig. 23. Granowo (after Kostrzewski)

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[1] *Die Chron.* 36. This is the number given by Dr. Bolesław Erzepki in figuring the find in *Album Przedhistorycznych Zabytków.*

[2] *Wielkopolska Czasach Przedhistorycznych*, fig. 106.

[3] See also von Richthofen (who accepts the higher number), 'Zum Stand der Vorgeschichtsforschung in Posen und dem Westlichen Kongresspolen', in *Mannus* xvi (1924).

Welbsleben (fig. 24).[1]

From a find-place which produced a large number of prehistoric finds come two halberds and a metal shaft from such a weapon, which seem to have been found in association. Montelius gives very little information about them but I have had the opportunity of examining one of them in Halle Museum. It consists of a separately-cast blade and upper part of a bronze shaft-head. The latter is ornamented with three conical-headed rivets but the blade is attached to it by means of two small rivets. The lower portion of the shaft-head is ornamented with a series of parallel lines. The blade shows two lines of zig-zag ornament which run on either side parallel to the edges and converge at the point of the blade.

The other halberd which I know only from the figure given by Wagener appears to be a most unusual type. The blade curves upwards and the shaft-head shows an open-work ornament which does not appear on any other example known to me. The shaft-head has a series of parallel raised bands running round it.

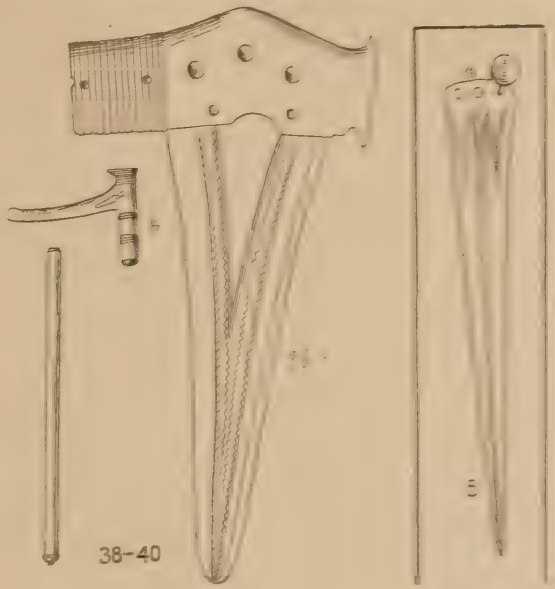

Fig. 24 Fig. 25

Fig. 24. Welbsleben (left-hand drawing after Wagener)
Fig. 25. Ried, Oberinnthal (after Montelius)

Ried, Oberinnthal, Tyrol (fig. 25).

A blade, called a short sword by Montelius,[2] but rightly regarded by Márton[3] as a halberd-blade, is part of a small hoard which contained also an axe with low side-flanges and almost circular edge, a heavy necklet of bronze with recurved ends, seven small conical spiral rolls, and twelve amber beads. The halberd-blade is about 41 cm. long and had three conical capped rivets, one of which remains. The blade bears ornament of incised triangles, three in number, the bases of which (not drawn) are towards the base of the blade.

Feuersbrunn, Lower Austria (fig. 26).

In an article recently published by Dr. Edward Beringer,[4] a description is given of a hoard of bronzes containing two halberds, an awl, and an axe with side-flanges. The find-place is situate in an area already well known for the number of its prehistoric finds, and believed by Beringer to be a centre of prehistoric settlement, perhaps also attractive as a centre from which graphite—a commodity used in the manufacture of pottery—was obtained. In April 1923 a late La Tène pottery kiln was discovered at Feuersbrunn, and in the course of further researches at the same spot, but at a deeper level, there was discovered the hoard with which we are concerned. The systematic excavation of the spot showed the find to be a grave-deposit which had been put down with an inhumed skeleton. The position of the skeleton showed the burial to have been a crouched one. By the feet of the skeleton was found a pottery vessel of flat type with small perforated handle (diameter at the rim 28·0 cm., height 6·0 cm.). Directly under this vessel was a small handled vessel. Only part of one handle remains, and opposite it, at the same height, is a small raised knob; a similar knob is situate half-way between this and the handle but has not got another on the opposite side (7·4 cm. in height, diameter of the outcurved portion 10·7 cm.). Both vessels are of dark brown clay, not well burnt. The first shows traces of polish on both sides, the second is well polished on the outer side only.

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[1] These examples have been frequently mentioned and figured, but not all the following references have been available to me: Montelius, *Die Chron.* 28; R. Schirwitz, 'Zur Vorgeschichte des Harzes', in *Zeitschrift des Harz-vereins für Geschichte und Altertumskunde*, Erstes Heft (1926), 2, pl. x, 13; Klemm, *Handbuch der germanischen Altertumskunde* (Dresden, 1836), 208, pl. xv, fig. I and II; Lindenschmit, *Die Altertümer unserer heidnischen Vorzeit* (Mainz, 1877), iii, 6, pl. 1, figs. 4, 5; C. L. Schäffer, *Beiträge an den deutschen Altertümern*; Wagener, *Handbuch der vorzüglichen . . . . Altertümer* (Weimar, 1842), 724, figs. 280–2, and others.

[2] *Die Chron.* fig. 277, and 110.

[3] *P.Z.* 29, footnote 23.

[4] 'Frühbronzezeitliche Stabdolche aus Niederösterreich', in *P. Z.*, xxv (L 934), 130.

Near the knees of the skeleton lay the awl. This has a length of 14·4 cm.; half of it is rectangular in cross-section, ending in a curved edge; the other half is of round section and has a pointed end.

Somewhere in the neighbourhood of the cheek of the skeleton lay one of the halberds, and the second, which was found in two pieces, with an interval between their discovery, also came from this spot. The first blade is asymmetrical in form. The manner of its hafting is shown by the mark in the oxidization of the surface marking the border between that portion which was enclosed by the wooden handle and the uncovered blade. The direction of this line shows the blade to have been so placed that the upper edge formed a right angle with the shaft, while the lower end formed an angle of 105°. The four rivets, Beringer points out, are so arranged that the pairs are situate on lines parallel to the direction of the shaft. From a consideration of the length of one of the rivets, of which the whole length remains, and of the thickness of the halberd at that point, we find the substance of the wood to have been 1·0 cm. on either side of the blade; a further evidence of the unpractical nature of halberds considered as weapons. A middle-rib runs from the point of the halberd to the limit of the hafted portion. The height of this middle-rib is greatest towards the point, and it gradually flattens as it gets wider. At either side is a narrow but distinct rib which runs parallel to the broad central rib. The length of the blade is 18·9 cm.

The second halberd, which is, as already stated, in two fragments which do not in their present condition fit together very well, is apparently much more symmetrical in form, but the photograph seems to show that it also was hafted so that the centre line of the halberd formed an obtuse angle with the shaft. A single, rather narrow, but apparently well-raised middle-rib is the only ornamentation, and this runs well into the portion of the blade which was enclosed by the handle. The length is 14·3 cm. There seems to be some doubt as to the position of the axe in the grave. It is said to have lain 50 cm. from the halberds and still in the direction of the head of the skeleton, but this is doubted, and it is suggested as not unlikely that in reality it lay with the halberds. The axe in its present condition does not afford evidence of a nick at the end as is so usual with Aunjetitz axes of this type. It is long in comparison to its width and curves inwards considerably at the middle. The side-flanges are not high, and cease at the outcurving towards the cutting-edge. Sides of the wooden shaft are preserved on the surface of the axe. Length 19·5 cm., breadth of the edge 4·4 cm.

Beringer shows that the grave-find as a whole is to be ascribed to the Aunjetitz Culture. The type of bronze axe belongs to this culture, as also does the shallow vessel, while the handled-pot is sometimes found in the same context, though as an intrusive element. The awl is of wide distribution in the Copper and early Bronze Ages. He further discusses the bearing of the find on general questions of the chronology of the Aunjetitz and Bell-beaker Cultures, but this we must deal with elsewhere.

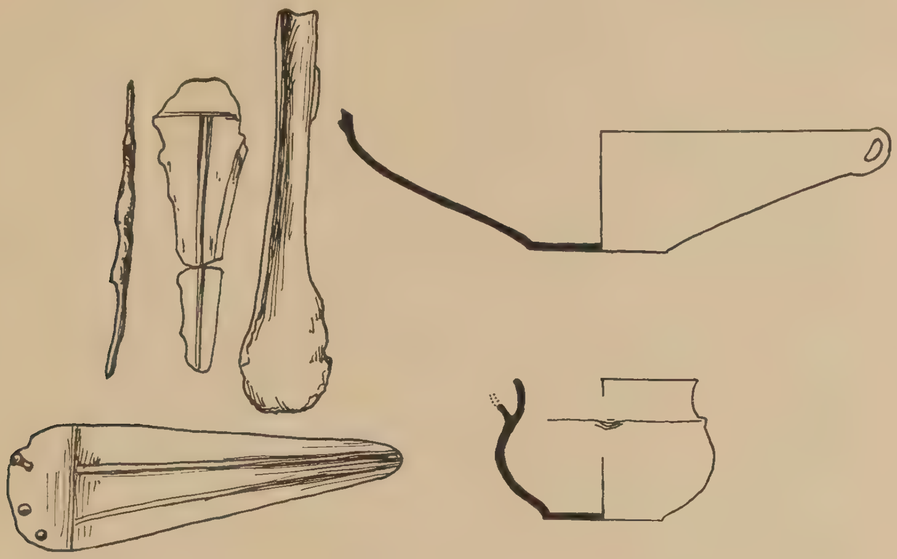
Fig. 26. Feuersbrunn, Lower Austria ($\frac{1}{4}$) (after Beringer)

Anderlingen, Kreis Bremervörde, Hannover (fig. 27).

The find which it is proposed to discuss here was first brought to notice by Hahne.[1] From his report the find does not appear to be such as to cast any light on the dating of the halberd, but from an examination of the material in question, and the illustrations with the report, it appears to me that the find may really be an important chronological clue, with reference not only to the halberd in Northern Europe, but also to the Ligurian Alps rock-pictures which hitherto have been dated on *a priori* grounds only.

The site described, a large tumulus containing a stone built grave, was first brought to attention by reason of its being removed by the farmer as building material. Secondary burials from the Migration Period were found about 50 cm. under the surface of the tumulus. The burial with which we are concerned was contained in a stone cist constructed of large stones, and having a length of 2 m., a breadth of 0·70 m., and a height of 1 m. This cist was, in common with the tumulus in general, unsatisfactorily excavated at various times over a period of some months by different persons (only the final clearing up of the site was done by Hahne). In it were found near the north end of the structure some very fragmentary portions of a skeleton, while near the southern end lay:

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[1] H. Hahne, 'Bericht über die Ausgrabung eines Hügels bei Anderlingen, Kreis Bremervörde', in *Jahrbuch des Prov. Museums Hannover*, 1907/8, 13. The inscribed rock is reproduced in Ebert, vol. 9, pl. 130.

(1) a dagger with three rivets. Fragments of a wooden leather-covered sheath were found;
(2) a bronze pin;
(3) a bronze axe of long, narrow, palstave type, with portions of the wooden handle still remaining.

Most interesting for our purpose is, however, the inscribed stone which formed the end stone at the southern end of the cist. This bears upon it three human figures, the middle one bearing an implement aloft in his hands. Hahne discusses at length a suggestion that was received in an anonymous letter after the discovery of this stone that the figures had been cut after the opening of the grave as a practical joke. He dismisses this idea, however, but states that the stone was, subsequent to its discovery, 'freshened' with sand, and the figures otherwise interfered with. There also was found on the stones of the grave a double discoloration due, it is suggested, to the lighting of fires within the tomb.[1] With its exposure to the air this staining of the surface of the stone decreased, and Hahne thinks that this may have been the cause of the design first being noticed. As already stated, the stone was then rubbed with sand, and there is also a suspicion that the figures were hacked at with a pointed instrument by boys of the locality. This interference occurred before the stone was taken over by Hahne. It does, however, seem that subsequent to its being photographed in position for the purposes of his report its surface was further interfered with. This may be noticed if a comparison is made between the photograph on his pl. IV, 3, where the stone is shown standing between the side-stones of the cist, and that on his pl. III, where it is shown alone.

The implement held by the middle figure has been described by Hahne as 'undoubtedly an axe',[2] and he has held the find to represent a southern extension of the Scandinavian rock-carvings. An examination of the stone has, however, suggested to me that whatever ground there is for the interpretation that the implement is an axe it is quite obvious that it cannot be said that it is 'undoubtedly an axe'. It seemed to me that the implement carried by the middle figure might equally well be interpreted as a long shaft to which is attached at right angles a triangular blade, the point turned to the right. The interpretation depends largely on whether a depression in the surface of the stone (the material is fine-grained granite) to the right of the triangular marking referred

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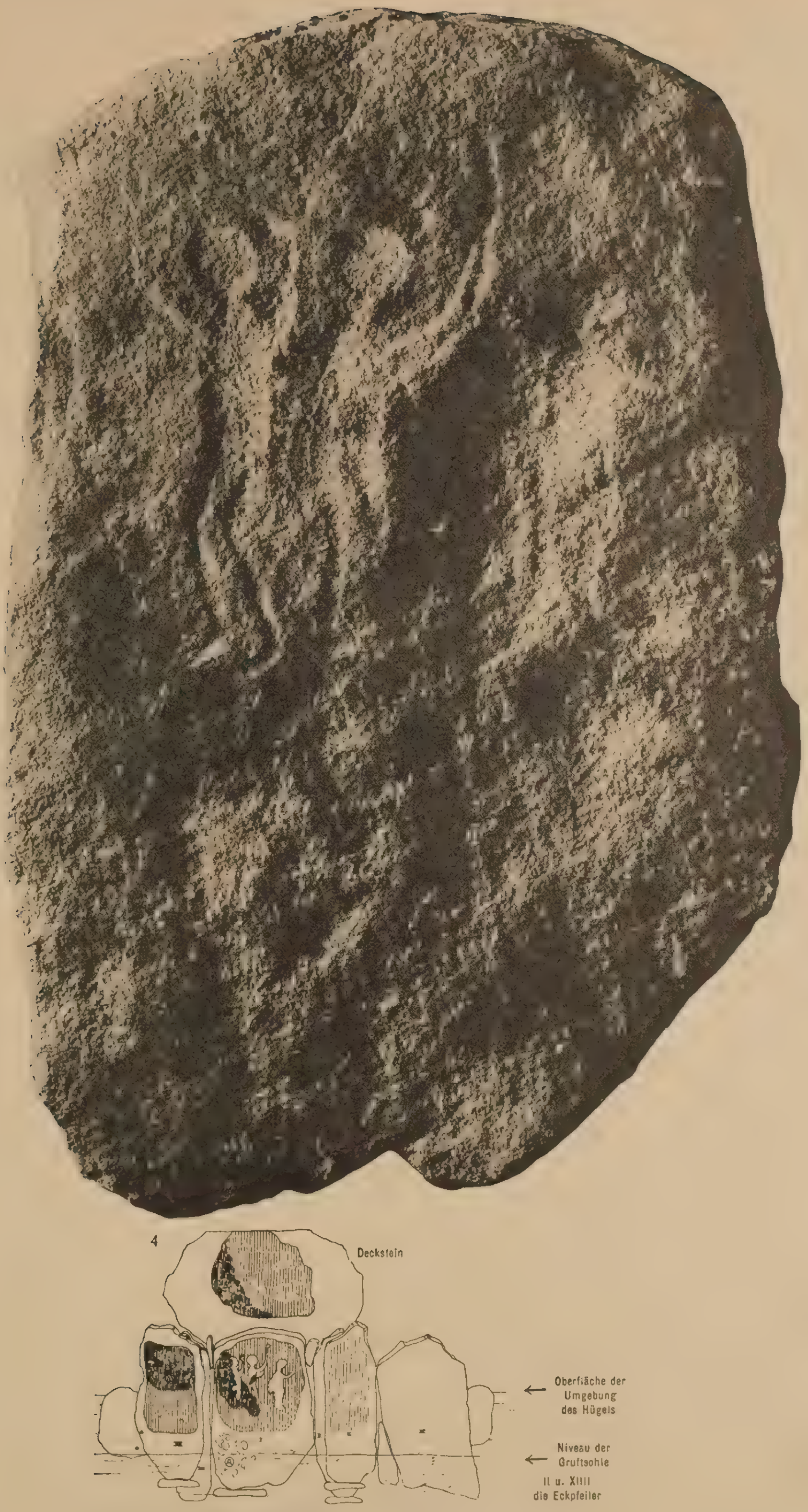
[1] Hahne suggests that this occurred twice, i.e. that the grave must be considered as originally neolithic and that the first discoloration occurred during that period. He suggests that in Bronze Age times the grave was cleared and re-used—a fire being again lighted in it. The correctness or otherwise of this theory need not concern us here, since Hahne is in any case agreed that the finds and the rock-scribing are contemporary.

[2] *Op. cit.* 17, '... der ohne weiteres als ein Beil zu erkennen ist, dessen Klinge in beinahe spitzem Winkel gegen den Stiel angebracht und nach rechts gewendet ist.'


4
Deckstein
Oberfläche der Umgebung des Hügels
Niveau der Gruftsohle
II u. XIIII die Eckpfeiler
A

Schematische Zeichnung betreffend die Verteilung der Verfärbungen und die bauliche Construction der Gruft, deren Südende hier „aufgeklappt“ dargestellt ist.

Fig. 27. Anderlingen. (Photo of inscribed stone by courtesy of Hannover Provinzial-Museum. Drawing of stone in position after Hahne)

to is part of the design or not.[1] If linked up with it the whole may be regarded as an axe, but if this depression is, as I suggest, accidental then the implement can best be regarded as a halberd. Fortunately we are not at this stage left completely without further evidence on the subject. On the earlier photograph (to which reference has already been made, his pl. IV, 3), in which the surface of the stone seems to be nearer to its original state than at present (the lower parts of the figure have already been rubbed), the implement appears to be such as I have suggested. That this was the interpretation of another observer is shown by the sketch (his pl. IV, 4, our fig. 27 bottom), which shows schematically the position of the stone in the grave. Here the artist (the diagram is not initialled, so one cannot tell if it was done by Hahne personally or not) was concerned only with the construction of the cist; he therefore had no preconceived notions regarding the figures, and it is significant to note that he represented the implement in question in the manner which I have suggested.

All the evidence considered, it appears to me that a very good case exists for the interpretation that the implement held by this figure is a halberd. This being so, we are given a further association for the halberd in Northern Europe—somewhat later, judging by the type of the axe, than that witnessed to by most of the finds, but not so late as the find from Cöthen.

The second result of such a conclusion is that it provides the first definite dating material for the rock-carvings in the Italian Alps. In these carvings halberds are not infrequently represented, and their manner of representation is a triangular blade attached to a shaft, the rivets being sometimes shown.[2] The outline of many of them is quite similar to that of the implement on the Anderlingen stone as shown in the diagram (pl. IV, 4) in Hahne's report. On the other hand, the rock-carvings in Scandinavia show axes with wide, curved cutting-edges, a type of axe which is best paralleled by that shown in Montelius, *Die Chron.*, fig. 214.

The question of the age of the Alps rock-carvings is discussed by Burkitt,[3] who holds that more than one phase can be noted, and that the representations of weapons and tools in some cases were superimposed on the farm scenes and, on this and also on the evidence of the patination and weathering, he concludes the latter class to be the earlier. The weapons represented are definitely Bronze Age in character; and on the evidence of these an early Bronze Age date for the sculptures as a whole has been suggested, but Burkitt, on the ground of the nature of the rock and the extent of the weathering influences to which it is exposed, does not agree that the carvings can be of such great antiquity. He suggests that the people who carved them were in an early Bronze Age state of culture, but that the carvings are not Bronze Age in *time*. The Anderlingen evidence, however, points to a date well advanced in the European Bronze Age.[4]

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[1] A 'squeeze' of the stone which I received through the kindness of Dr. Schroller, of Hanover Museum, does not throw further light on the question. The stone is shown in Jacob-Friesen's *Einführung in Niedersachsens Urgeschichte*, 84, but not from a photograph, and the fact that the implement is shown there as an axe does not help.

[2] For full references to these carvings see Ebert, iii, 226.

[3] *Antiquity*, iii (1929), 155, 'Rock Carvings in the Italian Alps'.

[4] Peet, *The Stone and Bronze Ages in Italy*, says: 'Finally it must be mentioned that the drawings show some analogy to the marks on many of the West European dolmens and menhirs, and also the rock-drawings in Asia Minor, the Canaries, and Morocco, but until the comparisons have been properly

Hitzdorf, Kr. Armswalde (fig. 28).

A find from this site is described by Kiekebusch[1] and contains:

(*a*) 2 blades showing incised ornament, dagger-like in appearance but having the two lower rivets asymmetrically placed (this is more true of one example than of the other), and so inclining one to the idea of their being halberds;

(*b*) a dagger with a metal handle;
(*c*) 2 bronze arm-rings;
(*d*) a shaft-hole axe;
(*e*) a very long, narrow axe.

SWITZERLAND

Vetroz, Kt. Wallis (fig. 29).

In Zurich Museum is an associated find consisting of two pieces only. One is a blade which may be a halberd[2] or a dagger, but because of its well-marked mid-rib it seems reasonable to regard it as a halberd though the smallness of the rivet-holes is somewhat against this. It appears to be of copper which again is in favour of its being a halberd. It is 22·3 cm. long and 6·6 cm. wide (Catalogue number 16332).

The other object (Catalogue number 16331) is a chisel, also evidently of copper. One end is blunt, the other has an edge 1·8 cm. in breadth. Two sides of the chisel are convex, the other two are concave. The length is 31·8 cm. There is no further information available regarding the circumstances of the discovery of the find.

FRANCE

Saint-Fiacre, Melrand, Baud, Morbihan (fig. 30).

At this site was excavated a tumulus which in the nature of its construction and in the richness of the grave-deposit showed itself to be of considerable interest.[3]

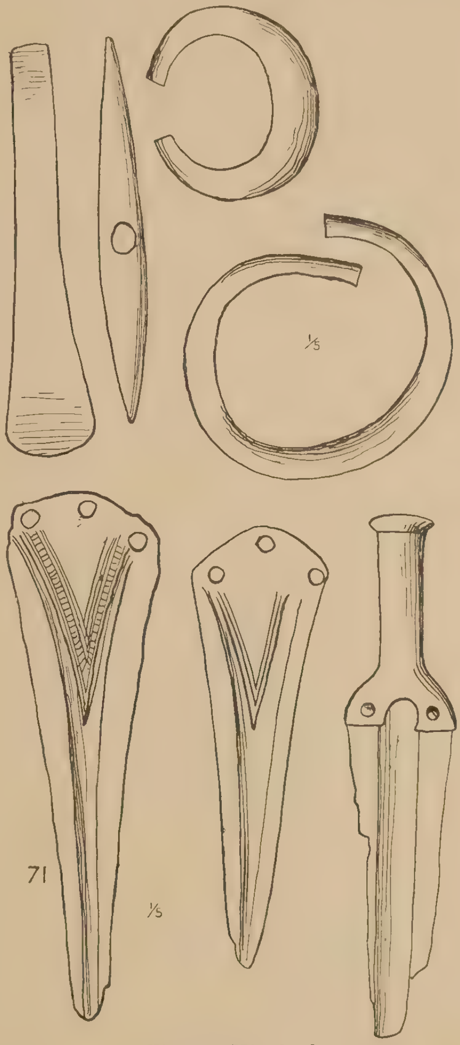

Fig. 28. Hitzdorf

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made on a large scale it would be merely misleading to attribute any value to the resemblances.' See also on this point Lissauer, 'Felsenbilder in Monte Bego', in *Zeitschr. f. Ethnologie*, xxxii (1900), 401, where he points to resemblances to carvings on the dolmen Trou-aux-Anglais, near Versailles.

[1] *Brandenburgia*, xl (1931), Heft 11–12.

[2] Illustrated in Kraft, *Die Stellung der Schweiz innerhalb der bronzezeitlichen Kulturgruppen Mitteleuropas*, pl. III, 16.

[3] Aveneau de la Grancière, 'Fouille du Tumulus ...', in *L'Anthropologie*, ix (1898), 134. Referred to by Bosch-Gimpera in *Préhistoire*, ii, 229–37.

The following description of tumulus and finds is from the excavator's account. The tumulus consisted of an outer covering of earth about 50 m. in diameter which covered a cairn placed centrally having a diameter of about 28 m. Covered by the cairn was found a semicircular line of slabs running inside the western edge of the cairn from the south to the north side.[1] At the centre of the cairn was discovered a megalithic cist 2·3 m. internal length, 0·80 m. breadth. In this was found a cremated burial accompanied by the following grave-goods:

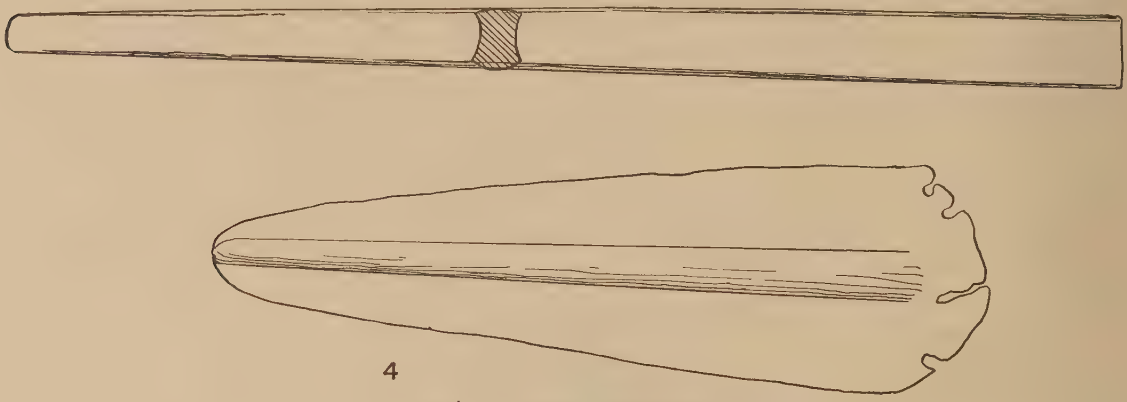

Fig. 29. Vetroz, Switzerland ($\frac{1}{2}$)

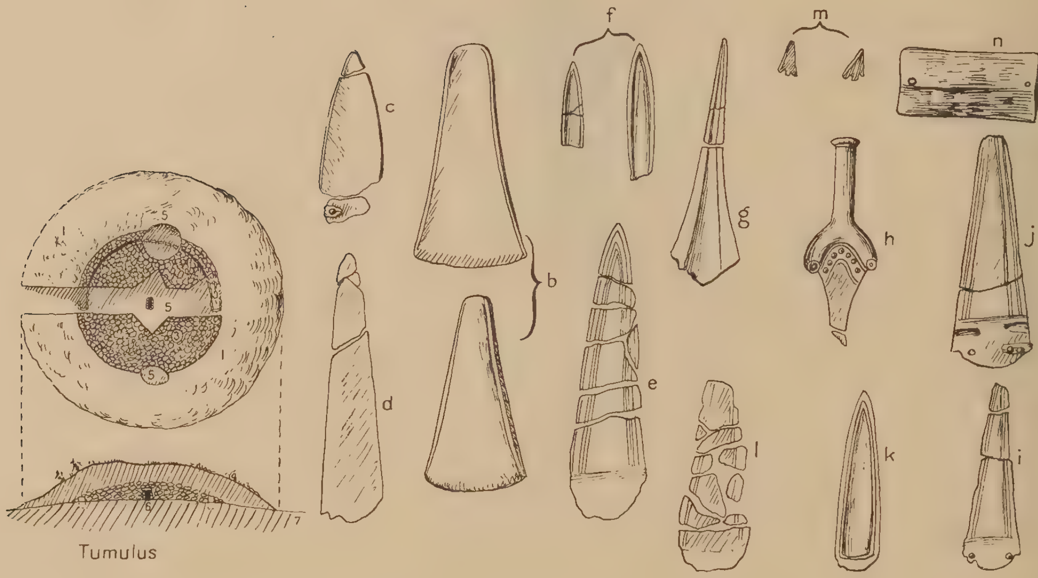

Fig. 30. Tumulus and finds ($\frac{1}{6}$), Saint-Fiacre (after Aveneau de la Grancière)

(*a*) a bronze vessel which, however, fell to fragments at a slight touch and could not be drawn or reconstructed;

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[1] This seems to be, in a more elaborate form, a similar feature to the arc-shaped setting of stones so frequent under cairns and tumuli: Ó Ríordáin, *Journ. Cork Hist. and Arch. Soc.* xxxviii (1933), 81, with references to barrows in the Netherlands (van Giffen); Childe, *Prehistory of Scotland*, 109.

(*b*) 2 slightly-flanged bronze axes;

(*c*) a knife- or dagger-blade (14 cm. long);

(*d*) a blade, 23 cm. in length, which the author suggests to be a halberd-blade. It had four rivets and recesses at the base for two others. The published figure is very poor and does not give one much opportunity to judge whether the blade is really a halberd or a dagger, but one is inclined to think it a dagger;

(*e*) a badly broken dagger-blade, 25 cm. in length, ornamented with engraved lines which run parallel to the edge;

(*f*) 2 fragments of the points of what appear to be leaf-shaped swords;

(*g*) part of what is described as a lance or a halberd. This is a tapering piece with a strong raised mid-rib. The taper may be such as would result from the wearing down of both edges of the weapon. It may therefore be the remains of a halberd with a mid-rib which widens considerably towards the upper end. It is more suggestive of a halberd than any other of those published;

(*h*) the handle and part of the blade of a dagger—all in bronze;

(*i*) a dagger-blade ornamented with engraved lines parallel to the edge. Length 16 cm.;

(*j*) a dagger, similar to (*i*) above, but larger (20 cm. long) and in better condition. It had four rivets of which three still carry traces of the wooden haft. If the published drawings could be taken as correct, the direction of the shading on the fragment of wood shown would suggest that the blade was hafted at right angles, but it does not seem that one can put so much reliance on the drawings;

(*k*) a dagger-blade, ornamented with two engraved lines following the outline of the blade. Length 15 cm.;

(*l*) a badly broken dagger-blade, similar to (*j*) above in ornamentation;

(*m*) 2 bronze arrow-heads, 1·6 and 1·2 cm. in length, respectively;

(*n*) an amulet in the form of a pendant of tortoise-shell. Dimensions: 5·8 cm., 2·7 cm. by 6 cm. The author suggests this to have been worn as an ornament on the chest and holds that it is not a wrist-guard. The description and illustration leave much to be desired.

This find is again brought to notice by reason of its having come into the possession of the Ashmolean Museum, Oxford, and is therefore referred to in the annual museum report.[1] There are certain additions to, or corrections of, the original report in this reference. We are informed that the vessel, stated to be of bronze in the original report, is really of silver and that one of the daggers had originally a wooden handle studded with gold pins (as in specimens from Wiltshire), and that some of these pins are preserved in a fragment of the wood, others being loose. Subsequently, Mr. Liam Price, editor of the *Journal of the Royal Society of Antiquaries, Ireland,* who with the permission and help of Mr. Leeds of the Ashmolean Museum kindly examined the find for me, informed me that all the blades with one exception are thin and dagger-like in character, the exception being that enumerated as (*g*) above. This blade which Déchelette[2] suggests is a halberd is heavier than the others, but it is clear that it also cannot be regarded as such since its examination showed the mark of the handle on the metal. We are therefore left with no evidence of a halberd in this hoard[1] beyond the not very substantial evidence afforded by the drawings in *L'Anthropologie*, and one can only say that even if any of the blades was hafted as a halberd it must be regarded as more closely related to the flat dagger than to a true halberd.

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[1] Report of the Keeper for 1926, quoted in *Antiquity,* i (1927), 233.

[2] *Manuel,* ii, 198, footnote 4.

Greece

Mycenae (fig. 31).

A find of a halberd from the Sixth Shaft Grave at Mycenae is important, not only because it provides an important chronological datum, but also because it gives evidence of the wide-flung trade connexions which existed as early as the Third Middle Minoan Period between the Eastern Mediterranean and the West and North of Europe. This halberd was first brought to notice by Schmidt,[2] and a drawing of it is published by Evans[3] who discusses its chronological implications. The matter is introduced in connexion with his treatment of the central island road in Crete and the evidences of trade found in relation to it. The date of the find is given with reasonable exactitude by the contents of the grave as approximately 1600 B.C. The halberd is not a usual type. It has a straight mid-rib but curved edges giving an almost 'leaf-shaped' outline. The lower edge is curved considerably more than the upper. It is, however, the position of the rivets which gives us unmistakable evidence of the weapon having been a halberd. These, of which there are five, are capped with conical gold caps—a feature which distinguishes the halberd from all other Minoan weapons—and they are placed in a shallow arc so arranged as to suggest a handle fastened halberd-wise to carry the blade at a slightly obtuse angle, as noticed in the case of so many Irish and North European examples. While such a blade does not come within the normal typological series of Northern and Western Europe it is not without parallels. One in the British Museum[4] from Ireland is remarkably similar: it has four rivet-holes arranged in the same way as the Mycenaean example, a similar straight, narrow mid-rib, and is curved on both sides. Another similar example comes from Gambara, near Brescia.[5] Evans pertinently points to the resemblance between halberds of this type and some of the Alps rock-carvings, particularly to one with a long, narrow, curved blade which he reproduces.

We must, therefore, see in the Mycenaean example evidence of connexion with Ireland in the matter of a halberd late in the evolutionary development and also, perhaps, Northern European influence as witnessed by the conical-capped rivets. That the weapon was regarded with particular respect is shown by the use of gold for the caps (note also the silver rivets of some of the Spanish examples), though with Evans we need not see in it, as Schmidt did, an heirloom in the royal house of Mycenae. His reason for putting forward this theory—that the context of the weapon represents a chronological discrepancy—is not convincing.

[1] Childe expresses this opinion in *Danube*, 244, footnote 4.

[2] *P.Z.* iv (1912), 35.

[3] *The Palace of Minos at Knossos*, ii, 173.

[4] Evans mistakenly distinguishes between this and the illustration of it in *Horae Ferales*, pl. x, 4.

[5] Illustrated in Evans, *op. cit.* 172.

Sesklo, Thessaly (fig. 32).

Another blade, the dating of which agrees with that from the Sixth Shaft Grave, was found in Tomb no. 25 at Sesklo[1] and, though small (13·2 cm. in length), was evidently hafted as a halbert. It has three rivets in position and the rivet-hole for a fourth is broken out. The mark of the hafting is shown on the figure. The most striking feature of the weapon as regards its shape is the fact that it has a straight upper side while the lower edge curves upwards to the point, thus giving a parallel to the shape of those mentioned in connexion with the Mycenae example. Minyan pottery was found in the tomb, giving us a date around 1600 B.C.

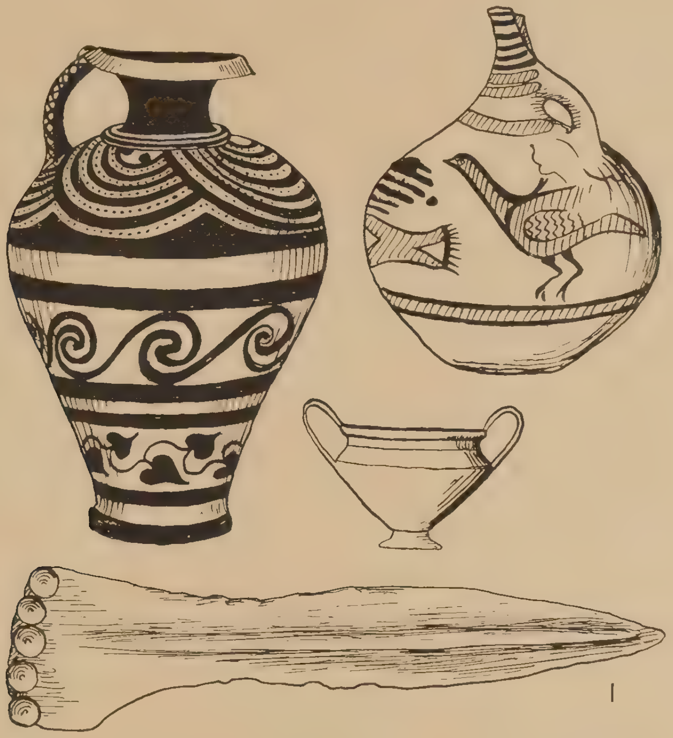

Fig. 31. Mycenae. (Halberd and left-hand vase after Evans. Top right-hand vase after Schuchardt)

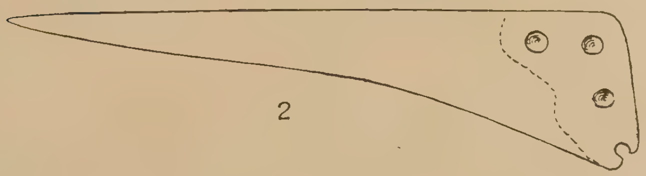

Fig 32. Sesklo

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[1] Tsountas, *Dimini ki Sesklo*. I have to thank Mr. C. C. Cremin for this reference. The weapon is also reproduced by Childe, *Dawn*, 77, who however does not specifically discuss it.

ITALY

Montemerano, near Saturnia, Province of Grosseto (fig. 33).[1]

This find contained a halberd, a triangular blade of bronze—evidently a dagger-blade, flanged axes with nicked ends and a small bronze cake. The halberd, which showed on its surface marks of a cloth wrapping—which Montelius adds does not prove the find to be from a grave—has a well-marked mid-rib and two stout round-headed

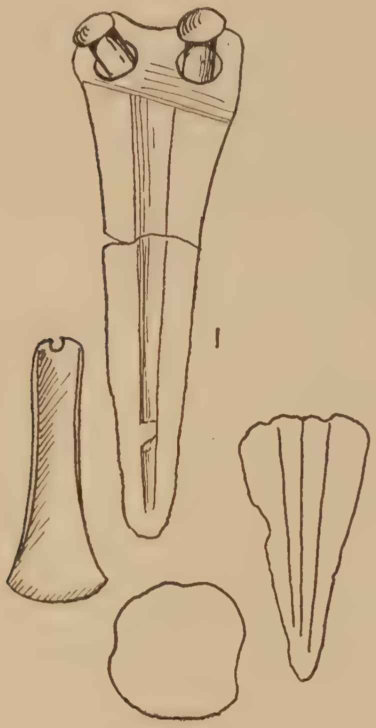

Fig. 33

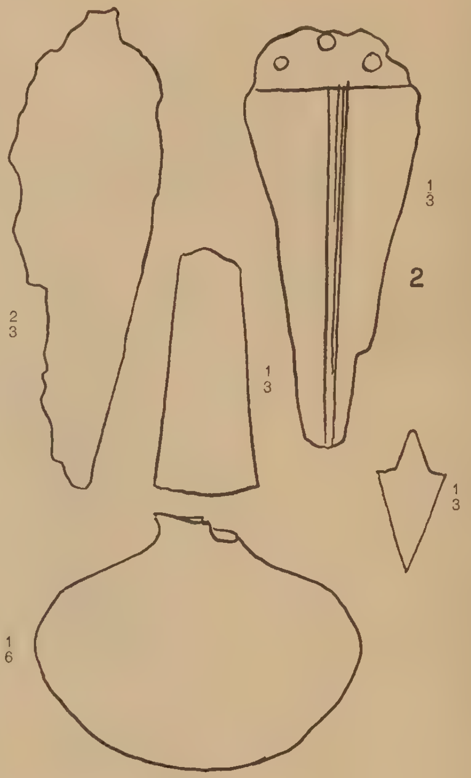

Fig. 34

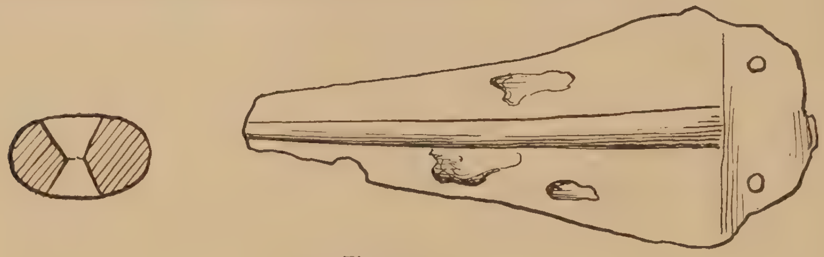

Fig. 35

Fig. 33. Montemerano (halberd $\frac{1}{3}$). Fig. 34. Rinaldone. Fig. 35. Viterbese ($\frac{1}{3}$)

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[1] Montelius, *La Civ. Prim. en Italie*, part II, pl. 118 and text, col. 579.

rivets. A transverse mark in the drawing evidently represents the impression of the haft. The weapon presents a very Irish appearance. The axe is of a type which occurs in the early part of the full Bronze Age in Italy.[1]

Other possible associations in Italy.

Certain other finds in Italy may be mentioned here, though, because the drawings are not sufficient to enable one to decide, it is not possible to say definitely if one is dealing with halberds or daggers. The fact that the object is described as a dagger in the French or Italian literature on the subject does not always prove the object to be really a dagger.

Rinaldone, commune de Montefiascone, near Viterbo (fig. 34).[2]

One such find is that from this necropolis which dates from the Copper period. Eight tombs were examined and no. 3 contained the skeletal remains of two individuals, 2 stone hammers, 2 flat copper axes, 4 arrow-heads of flint and 2 copper blades (described as 'daggers'). Regarding one of these blades, there is nothing to suggest that it is anything but a dagger. The other, however, has a well-developed mid-rib, and a line across the blade evidently marks the line of the haft. Though there may have been daggers with straight-ended handles this feature on the blade suggests its having belonged to a halberd. Judging by the figure published by Montelius, the blade is about 18 cm. long.

Viterbese, Rome (fig. 35).[3]

Another blade (length 18·8 cm.) showing all the characteristics of that described above comes from a tomb which also contained a dagger (presumably of copper) and a perforated stone hammer.

SPAIN

Associated finds of halberds from Spain are numerically well represented. All of them, however, come from a restricted area and a restricted cultural environment. They are all from south-east Spain and are made known to us as a result of the researches of the brothers Siret.[4]

It has been noted by Siret that the graves containing halberds are distinguished from the others by being richer and evidently those of exceptional persons. Pottery of his Type 6, otherwise rare, occurs in them, while the use of silver rivets and the presence of silver and gold ornaments in burial groups containing halberds will be noted in the following enumeration. Another fact noted in the excavations was that halberds tended to replace flat axes on some of the sites; thus at El Oficio four halberds[5] (I can find only three mentioned individually in the text or figured by Siret) were found, but only two flat axes; and again at Fuento Alamo no flat axes came to light though the site produced at least three halberds.

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[1] Peet, *The Ages of Stone and Bronze in Italy*, fig. 165.

[2] Montelius, *La Civ. Prim. en Italie*, part II, 614, 615, with references.

[3] *Bull. di Pal. Ital.* xxix (1903), 158, fig. 7.

[4] For the figures of these halberds I make use of my own drawings from the originals in the B.M., the Ashmolean Museum, and in Brussels, as well as the illustrations in H. and L. Siret, *Les Premiers Ages du Métal dans le Sud-Est de l'Espagne* (quoted below as 'Siret').

[5] Siret, Texte, 196.

El Argar (fig. 36).

Grave 169.[1] A cist 87 cm. by 50 cm.). Finds:

1. a halberd (no. 1), the base only slightly curved. Remains of the wooden haft show the grain to run transverse to the length of the blade but under these are fragments of wood of which the grain runs in the same direction as the line of the blade. Siret supposes these latter to be the remains of a wedge. The blade is fairly thick but has no mid-rib;
2. a bone point;
3. a small dagger, showing signs of the position of the handle;
4. a bronze bracelet.

Grave 244.[2] A cist-grave (80 cm. by 55 cm.) containing two skeletons with:

1. a halberd (no. 2);
2. a large dagger;
3. a knife; these three weapons showing traces of the wooden handles;
4. a silver bracelet still in position on the skeleton;
5. a silver ring (ear-ring?);
6. pots of Types 5 and 6.

Grave 449.[3] A cist-grave (80 cm. long, 57 cm. broad, 50 cm. high) which contained two skeletons, together with:

1. a halberd (no. 3), of which part of the wooden handle remained. This is the example usually figured in publications mentioning the Argar halberds;
2. a dagger, traces of the wooden handle remaining;
3. a bronze bracelet;
4. 2 rings (ear-rings?) of silver;
5. a pot of Type 4.

Grave 533.[4] A halberd (no. 4) and a dagger accompanied the burial, of which we are given no further particulars than that it was a simple hole in the ground closed by fragments of clay. The halberd has a broad, rather rounded base. Traces of the wooden handles remain on both halberd and dagger. No pottery occurred.

Grave 534.[5] A grave described similarly to no. 533 and also containing only a halberd and a dagger. The latter is small. The halberd (no. 5) has a more rounded base than that from 533.

Grave 575.[6] No particulars of the construction of the grave are given, but the contents were:

1. a weapon (no. 6) like a dagger or short sword, with a metal hafting-plate and two

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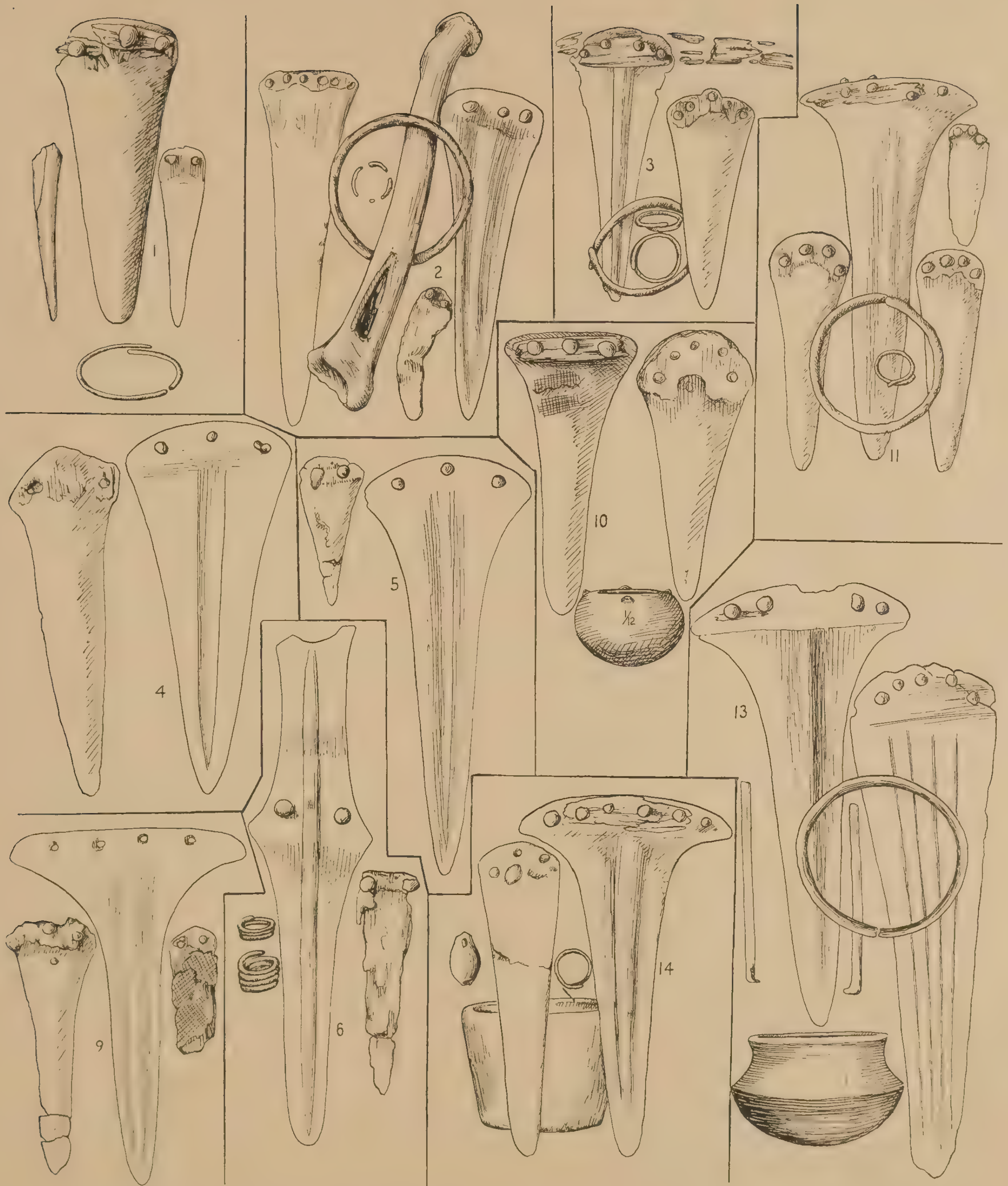
[1] Siret, pl. 33.
[2] *Op. cit.*, pl. 33.
[3] *Op. cit.*, pl. 32.
[4] *Op. cit.*, pl. 33.
[5] *Op. cit.*, pl. 33.
[6] *Op. cit.*, pl. 33.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2
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9
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14

Fig. 36. Associations of Spanish halberds (after Siret). Numbers on halberds as in lists and text ($\frac{1}{3}$)

stout silver rivets, which Siret suggests is a halberd.[1] His reasons for this suggestion are that the mark of the transverse haft shows on the handle, the rivets are heavy, and they are so placed that the blade did not fit at right angles to the shaft. Siret states that the weapon altered much subsequent to discovery as is frequent with blades having rivets of silver, such rivets being usually fitted to weapons of bronze, which is more subject to alteration than pure copper;

2. a small dagger;
3. two rings formed of bronze (?) wire.

El Oficio (fig. 36).

Grave 9.[2] A cist which contained two skeletons with the following grave-goods:

1. a halberd (no. 9), four rivet-holes but the rivets missing;
2. a dagger which had three rivets of silver in position, some fragments of the wooden handle being held on by them;
3. a knife having on its surface the remains of the wooden handle and of cloth in which it had been wrapped;
4. pots of Types 1 and 4.

Grave 42.[3] A cist containing two skeletons, together with:

1. a halberd (no. 10) with three rivets in position and a considerable amount of wood of the shaft remaining. Traces of cloth wrapping remain on the blade;
2. a dagger, showing plainly the traces of the wooden handle:
3. pots of Types 1 and 6.

Grave 62.[4] A cist containing two skeletons, together with:

1. a halberd (no. 11) with four rivets and traces of the wooden haft. This halberd, together with that from Grave 42 and that from Grave 533 at El Argar, was tested by Dr. Plenderleith of the British Museum laboratory, who pronounced them to be bronze. Circumstances did not allow of a quantitative analysis, and the test was carried out by dropping a little dilute acid on the surface of the metal and, when its action had ceased, evaporating it from a dark paper. A residue of tin was left in sufficiently definite quantities to enable one to say that it had been deliberately added to the copper to produce bronze;
2. two daggers showing traces of the handle;
3. one knife, also with traces of the handle showing;
4. a bracelet of silver;
5. a ring (ear-ring ?) formed of one-and-a-quarter turns of silver wire. Diameter 2·3 cm.

Fuente Alamo (fig. 36).

Grave 1.[5] The largest cist met with in the course of the excavations (2·25 m. long, 1·20 m. broad, 1·25 m. deep). It was enclosed on three sides by the remains of what may have been a later building. Outside the end-slabs of the cist were the remains of destroyed burials. The skeletal remains in the tomb were in a very bad condition, but only one individual seems to have been represented. The grave-goods were:

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[1] An examination of the piece in question in Brussels had already convinced me, before I noticed Siret's statement, that it was hafted as a halberd.

[2] Siret, pl. 63.

[3] Siret, pl. 63, pot of Type 6 on pl. 62.

[4] *Op. cit.*, pl. 63.

[5] *Op. cit.*, pl. 66.

1. a halberd (no. 13) on which are noticeable the remains of the wooden haft. The grave, when found, was full of earth and the halberd-blade was discovered at about half way to the bottom against the end slab. It would therefore appear that it had been put in with the handle attached, the blade lying against the end of the cist, and that the cist had then been filled up or had subsequently filled by infiltration so that when the haft of the halberd decayed the blade remained in position;
2. a large dagger or small sword, the only weapon of this type on which ornament was noticed. This took the form of four sunken narrow grooves, the pair at the middle being deeper than those at either side. The rivets (of which five out of the original seven remain) are short;
3. two metal (bronze or copper?) bars;
4. a plain gold bracelet;
5. two pots, one of Type 6, the other of Type 5.

Grave 18.[1] A cist-grave (evidently with one individual) with:

1. a halberd (no. 14) with six rivets of silver, among which are preserved fragments of the wooden haft. This weapon, Siret says, has through contact with the air deteriorated considerably. It was placed in the grave, point downwards, in such a position as to be ready to the hand of the dead person;
2. a dagger;
3. a ring (ear-ring?) formed of one and one-third turns of gold wire;
4. a perforated shell (*Cypraea*);
5. a large pot which tapers down to a flat base.

NETHERLANDS

Wageningen, Veluwe, Gelderland (fig. 37).[2]

Of the three halberds found in the Netherlands, two come from this hoard. The illustrations which I have given are from Pleyte's book. The find contained fragments of what we are told is a 'beaker-shaped small vessel', but the illustration is not sufficiently good to enable us to say if it is really a beaker in the technical sense of the word.[3] The other objects were a flat axe of bronze evidently about 12 cm. in length, two armlets, two fragments of what Pleyte described as a hacked-off peg or other implement, but which looks like an axe-fragment in the illustration. One of the halberds (described as daggers in the report) is about 20 cm. in length and has on the base three openings (approximately semicircular) where the rivets fitted. The second halberd is about 14·5 cm. in length and has three rivet-holes, one of which is broken out at the edge of the base. The first halberd has a definite broad mid-rib; the second appears to increase in thickness towards the middle without the mid-rib being so well marked. In both, the position of the rivet-holes is asymmetrical in such a way as to cause the blade to be at an obtuse angle with the shaft.

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[1] Siret, pl. 66.

[2] W. Pleyte, *Nederlandsche Oudheden*, pl. XI, and p. 49.

[3] As Pleyte's book was published in 1877, the statement that the pot is such as is 'associated with the Celtic or Gallo-Belgic civilization' (*die wij tot de Keltische of Gallo-Belgische beschaving brengen*) does not help.

Definition, Function, and Material.

Before going on to the more general portion of this paper a word must be said in definition of the halberd. In a general sense the metal halberd is easy to define: it is a pointed metal blade affixed at or near the end of a shaft and transversely to it. The application of the definition is not so easy. If the shaft is of metal the recognition of a weapon as a halberd is simple, and the same is true of wooden-hafted weapons of which part of the haft remains in position or on the bases of which the direction of the grain of the wood shows. When there is no shaft, or trace of a shaft, to guide us the matter can become most difficult, because it is necessary then to decide whether the blade is a halberd or a dagger. Coffey has pointed out that in Irish halberds the end-rivet is shorter than those farther from the base, which shows them to have been hafted transversely. Having thus got the criterion by which to distinguish some halberds, we are led by the examination of the examples so recognized to a knowledge of other characteristics which mark off halberd- from dagger-blades. The former are usually heavier, a more distinct and raised mid-rib is shown, and the position of the rivets shows that the blades were usually affixed to the handle,

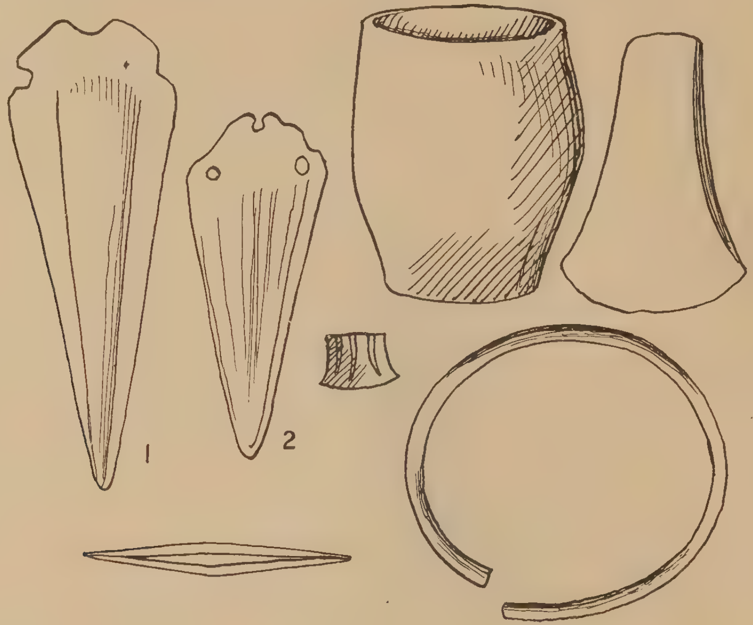

Fig. 37. Wageningen, Netherlands (⅓), after Pleyte

not exactly perpendicularly, but so as to make an obtuse angle with it. In Irish examples we are sometimes helped also by the curve of the blade which, when present, unmistakably distinguishes them from daggers. In Northern and Central European specimens the manner of asymmetrically placing the rivets is of importance in identifying halberd-blades which otherwise possess all the characteristics of daggers. A straight mark across the blade at the end of the haft may also be a sign that the blade is that of a halberd, since dagger-hafts usually have a notched or an arched end to the handle; but we shall see that this cannot always be taken as a criterion, for the Spanish knife-daggers are sometimes affixed to straight-ended handles. The halberd-blade is frequently of asymmetrical form.

The decision whether a weapon is a halberd or a dagger cannot be made to follow fixed rules; each example must be considered in the light of the features here mentioned.

While there can be no doubt that in its origin the halberd was a practical weapon, it is also evident that in the main it is a non-utilitarian object which served as an emblem of authority. The nature of the weapon is such that, even with the heavy rivets of the Irish examples, it could not be used vigorously on a wooden handle without becoming detached. (This applies least to the earliest specimens which are fastened with four rivets.) The German halberds with metal hafts are even more unpractical because they contain such a high percentage of tin as to break easily if used as striking-weapons. The blade is frequently fixed to the metal shaft by means of very inadequate light rivets, the large conical-headed ones being residual ornaments. Such a fastening would not allow the halberd to be used as a weapon. Great care was lavished on the ornamentation of some of the Continental halberds. One of these from the Oder has a gold sheeting under the rivet-heads, and one from Switzerland has the remains of a similar bronze sheeting. Again we find gold conical rivet-caps on the Mycenaean halberd, while rivet-caps, equally unserviceable as a fastening, though of bronze, are on some of the Swiss and German halberds and on one Irish specimen. All these reasons go to prove that the halberd was a symbol rather than a weapon (though for convenience we frequently refer to halberds as weapons in these pages); in fact they show that the now obsolete German term *Kommandostab* was really a fitting one.

In what sense it was a symbol is not so clear. We must anticipate the conclusions by saying that the halberd (though it survives later in places) makes its appearance in early metal cultures and marks the spread of metal-working in its distribution. The halberd may therefore be a symbol of the early metal-worker who must have been a most important figure in the Copper period and early Bronze Age community.

The German halberds with metal shafts have been referred to as having a high proportion of tin. In Ireland the metal used was copper in all cases where analysis is available. Coffey published an analysis by Mr. James H. Pollok of five halberds, in none of which is the tin content over 0·31 per cent. Dr. K. C. Bailey of Trinity College, Dublin, has kindly analysed five specimens for me with the following results (the numbers are the same as in the lists for Ireland in the appendix where the details of locality, etc. will be found):

No. of Halberd.	*Copper.*	*Silver.*	*Lead.*	*Zinc.*	*Iron.*	*Tin.*
1	98·2 per cent.	nil	nil	nil	trace	nil
15	98·4 ,,	nil	nil	nil	nil	nil
32	94·0 ,,	nil	trace	nil	trace	nil
104	94·3 ,,	nil	nil	nil	nil	nil
128	92·9 ,,	nil	nil	trace	nil	nil

The quantity of metal analysed was in every case small, and Dr. Bailey says that it was not possible to estimate the 'traces' accurately, but that the balance of the deficiency was probably not made up mainly of small amounts of other metals, but of earthy impurities, sulphur, etc. Dr. Plenderleith of the British Museum laboratory has also kindly tested the halberds in the British Museum for me. While an analysis was not done, the test used (p. 238) is sufficiently exact to show whether the specimen has enough tin in it to be declared a bronze. All the Irish halberds were found to be of copper, as also were nos. 1 and 8 from England, while no. 9 was of copper with a trace of tin. No. 18 from Scotland was pronounced bronze. This last specimen is of late type.

Two halberds are included in the tables of analyses given by Siret.[1] One from El Oficio, Grave 62, contained a little tin, while one from Fuente Alamo, Grave 1, contained a trace of tin. Neither can be described as of bronze. On the other hand, Dr. Plenderleith declared that those in the British Museum from the Siret excavations were of bronze. The analysis of the Meckenheim blade (see under Hoards) gave 7·32 per cent. of tin.

The only general conclusion to be drawn from the available analyses is that the use of pure copper for the making of halberds persisted in Ireland even in advanced types. So uniform is this tendency that one is inclined to think of it as the continuance of a tradition; copper having been used in the earliest Irish halberds, its use, when tin was already known, may be a further proof of the symbolic significance of the halberd. In countries where the halberd idea was an importation, such a tradition regarding material would not continue, or would be overcome by the fact that tin was more plentiful than in Ireland.

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[1] *Les Premiers Ages*, 219.

THE TYPOLOGY OF THE HALBERD

Typological systems for halberds have been given us by Coffey,[1] Schmidt,[2] and Kossinna.[3] Schmidt's system, since it deals with the broader and more obvious divisions of the weapon, we shall deal with first. He divides halberds into two main groups:

I. those which had been fitted to wooden shafts;

II. those which were attached to shafts of which either the top or the whole was of metal.

These latter halberds he subdivides into groups:[4]

IIa. those which have a separately cast blade attached to the metal shaft by rivets;

IIb. those in which the blade is cast on the metal shaft as one piece.

In class II in general the shaft may be in one or more parts. When it consists of more than one tubular portion we have evidence of its having been held together by a wooden peg which fitted into both pieces. We may also have weapons in which the greater part of the shaft was of wood fitting into a metal head and ending with a bronze ferrule, the intervening part being perhaps (Schmöckwitz) decorated with bronze rings.

An obvious interpretation regarding the relative chronology of the halberd is that it developed through the series of types thus: I, IIa, IIb. That this must, in the main, have been the case is suggested by common sense. We may suppose that the first stage in the affixing of the blade to a metal shaft would be to do so by riveting it on, and a later stage would be to use the weapon so produced as a model, and perhaps even to provide the mould from which to manufacture a halberd in one solid piece in which the rivets were ornamental survivals and no longer functional features. Evidence is not lacking, however, that this development is ideal rather than actual. The Bethkenhammer halberd belongs to type IIa, yet the technique used and the skill of its manufacture show it to be, as Schmidt suggests, one of the latest of the series. Again, the small hoard from Cöthen, in which a blade was found which must have been attached to a shaft (wood or metal) by rivets, and with it an axe of hybrid and obviously late type, gives us another example of the possible late dating of halberds of type IIa. We have also examples of hoards (e.g. Dieskau, I and IIb) in which the form IIb is associated with IIa or even with I. This discussion and the typology are Schmidt are applicable to the Northern European group of halberds —their divisions are not sufficiently specialized to be of use in other regions where the halberd is found. That his types, though suggesting a chronological sequence, are found to occur in contexts such as show this sequence to have frequently broken down is indicative of the rapidity with which development in the evolution of the halberd took place in Northern Germany and Scandinavia—a rapidity of development which arose from a sudden and rich growth in the knowledge of metal-working, and to which it will be necessary to refer again.

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[1] *P.R.I.A.* xxvii (1908–9), 94. [2] *P.Z.* i (1909), 115, and Ebert, i, 297. [3] *Mannus*, ix, 157.

[4] This is the only meaning that Schmidt's text can be made to yield, but he then makes the quite inexplicable statement that the halberd from Bethkenhammer is the only one he knows which falls into the division IIa. This is surely unsustainable in view of the fact that the example from Jagersberg, and even that from Canena (which is the theme of his paper), definitely have blades fastened by rivets on the metal shaft. Seger accepts Schmidt's statement, and treats of the Kuttlau halberd as the second known example of type IIa (*Alt-Schlesien*, iii, 1, 5).

Kossinna's typology is applicable to halberds with metal handles only. It therefore gives us sub-divisions of Schmidt's type II. His scheme is based on the type of head which the weapon possesses, and his nomenclature is based on the geographical distribution of his types. We thus get a series

K I = *Saaletypus*—the halberd-head has a semicircular projection at the back;
K II = *Westbrandenburgisch-mecklenburgischer Typus*—those with a triangular projection;
K III = *Nordposencher Typus*—those with a back cut off parallel to the line of the shaft.

Kossinna suggests that these divisions give not only a typological development but also the chronology of the metal-shafted halberd. Since the earliest type of metal haft would imitate its forerunner with wooden handle, and since type K I obviously does this while K III is farthest removed from it, we must on *a priori* grounds think Kossinna's thesis to be correct, but the hoards show us that the associated objects are in the main similar throughout the series, and we have examples of the different types being associated in hoards: thus K III (which to a remarkable degree centres in the Posen area) is found with K II in the find from Granowo. It is therefore evident that while the series K I, K II, K III represents the chronology of development, this does not mean that all examples fall into this chronology exactly.

The two systems with which we have dealt, since they take account of halberds with metal hafts, are applicable to the North European series only. Metal shafts seldom occur elsewhere.[1] We must, therefore, now consider a typological system applicable to halberd-blades which had wooden shafts, or rather a system which is intended to apply in particular to the Irish series, since these are our special consideration, and since they form, as will be shown, so important a part of the general evolution of the halberd. Such a system is provided, though not with clear-cut divisions, by Coffey, and this is given us in a more easily appreciated tabular form by Macalister,[1] who lists four classes.

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[1] A study of the figure in Wilde, *Cat. Bronze*, 492, and, in the Museum, of the objects represented does not convince one that he is correct in suggesting that the Rock Forest halberd was attached in this way to a metal shaft or that the bronze tube in question is anything but part of a trumpet. Metal shafts are represented in South Germany by two finds, and in Hungary by one.

With certain modifications this system will be adopted for use with the Irish halberds. In dealing with the distribution of the weapon, it will be seen that a somewhat more rigid subdivision is more useful, and for this reason it is proposed to make six classes. These are as follows:—

Type 1.—Short, broad blades with four rivets and with no mid-rib, or with only an incipient mid-rib. If we confine this class to those blades which, definitely, have no mid-rib we should find it to include only one example; but the broader definition enables us to include also two other specimens related to this one in having mid-ribs either so broad or so indefinite as to enable one to say of them that they are yet in the line of development towards Class 2, though not far enough advanced to justify one in placing them in this group. The general technique of examples of this type merits a word. They are in every case quite evidently of pure copper, and their badly finished surface is similar to those of the copper axe-heads whose general character shows them to be at the beginning of the series of copper axes.

Type 2.—Halberds of this class have still got four rivets, but show a developed mid-rib. The hafting-plate is a narrowing of the base of the blade, and is approximately rectangular in outline, thus differing from the previous class in which the outline is roughly oval and the hafting-plate does not noticeably divide off from the main portion of the blade. There are nine examples listed, and it will be seen from the illustrations that these (arranged in sequence) vary from short blades, very similar to those of Type 1, to blades which, though preserving the same general characteristics, differ from them by their greater length. The distinguishing feature of Type 2 is the possession of four rivets usually set in a projecting hafting-plate of rectangular outline, but it is evident that a considerable overlap must have occurred because not only do the blades of Type 2 approach or equal those of Type 4 in length, but one of them (no. 11), by the arrangement of its mid-rib, suggests the influence of the curved blades of Type 5.

Type 3.—Halberds of Type 3 (eighteen examples) have three rivets, but show strong reminiscences of Type 2 in having short blades, and in many instances a hafting-plate which narrows and projects from the general outline of the blade. No. 29 (from Ballygawley) is included in this class, because, though there are now more than three rivet-holes, it is evident that some are secondary.

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[1] *Archaeology of Ireland*, 63.

Type 4.—Halberds of this type are similar to those of Type 3, except that they are longer and do not have the narrowed hafting-plate of some of the earlier type. There are thirty-four examples.

Type 5.—Halberds of Type 5 differ from those of Type 4 in having a curved outline. They have each three rivets, and the technique of manufacture is excellent. The graceful manner in which the blades curve is, in its general effect, very pleasing. There are sixty-four examples of this type.

Type 6.—Although there are among the Irish halberds only three examples of this class, it is found convenient to regard them as representative of a separate type, since we shall notice later that many halberds of the same kind from Great Britain fall into this category. The type is distinguished by having in most cases a straight outline and by the fact that the number of rivets is more than three, these being usually arranged to form a curved line which runs parallel to the base of the halberd-blade, the latter being also in outline a shallow arc. It will be remembered that halberds of the two preceding classes have also curved bases, but the curve is usually deeper than in those of Type 5.

In addition to those halberds which fall into the above classes, we have among the Irish group eleven examples which cannot be fitted into any of our six types. Two of these (nos. 140 and 141) are included in this miscellaneous group because we know of their having existed, there being no illustration available. No. 137 is in very bad condition, and the rivet-hole in which sits the only remaining rivet seems to be a secondary boring. Nos. 138 and 139 have each remains of six rivet-holes, but it is not possible to decide if these were all part of an original scheme. No. 133 is interesting because of its similarity to one from Italy and another from the Sixth Shaft Grave at Mycenae (dealt with under Hoards, etc.). It is, however, unique in Ireland. Nos. 134 and 135 resemble each other remarkably, though both are very specialized forms. We shall have to remark on these again later in relation to the evolution of the halberd with special reference to the Spanish examples. No. 136 is a peculiar diminutive type, its having two rivets making it similar to no. 143. No. 142 is reminiscent of some of the Swiss examples in the straight mid-rib of triangular section.

In presenting the typological systems dealt with above it has been necessary to confine them to two areas: (1) Ireland for a system to fit the wooden-hafted halberds, and (2) Northern Europe for a system especially suitable for halberds with metal hafts. There are, it must be understood, several other halberd types known, but these are either so specialized (e.g. Spain), or so varied within a particular region as merely to represent small groups showing diverse lines of development (e.g. Switzerland), that it will be best to deal with them when treating of the evolution and distribution of the halberd.

Non-metallic Halberds and Analogous Implements (figs. 38, 39, and 40).

The subject here to be dealt with has been treated in part by various writers,[1] each of whom, however, dealt with the problem from the viewpoint of showing the halberd of metal to be derived from that particular type of non-metallic weapon or implement favoured by him. Coffey combined two suggestions. He pointed out that in the Bann are frequently found flint wedges or picks, 15 cm. to 20 cm. long, stout in body and more or less subtriangular in section. One of these implements is figured by Coffey.[2] It tapers from the butt-end, which is part of the flat surface of the core from which it was shaped, and measures 13·3 cm. in length by 6·6 cm. across the butt. Coffey regards it as doubtful if any of these stout pieces were mounted on handles as picks, but says that the flatter blade-like pieces present some analogy to the copper halberds of the earliest type. His second suggestion regarding the influence of non-metallic implements on the evolution of the halberd is that the curved blades are the result of an imitation of the deer-horn pick. He then adds: 'Why the curved form should be apparently confined to Ireland, we cannot explain; but the halberd had evidently a wide and fairly long use in the island.'

Schmidt deals with those flint implements of the Iberian Peninsula which, by reason of their broad bases and general unsuitability for hafting as daggers, must be regarded as halberds. He mentions such blades from the following sites:

1. a dolmen at Monte Abrão (Bellas) (fig. 38, 1, 2, 3);
2. a grave at Folha das Barradas, near Cintra (fig. 38, 9 and 10);
3. a dolmen at Villas do Niza (Alemtejo);
4. a dolmen at Granja do Marquez, near Cintra;
    (all these four in Portugal);
5. Garrovillas, Prov. Caceres, Spain (fig. 38, 5).

The blade from Monte Abrão (fig. 38, 3) is probably the most interesting of those listed.[3] It is 17 cm. long, 8 cm. broad, and 1·5 cm. thick, and is partly polished. The outline is triangular, and at the base are two nicks, one on the corner, the other slightly higher along the side of the blade. With this blade was found another (fig. 38, 1), 14 cm. long, 4·5 cm. broad, and 0·9 cm. thick, which is undoubtedly to be regarded as a dagger-blade. These two weapons were found in a dolmen of passage-grave type, having a chamber of irregular polygonal outline. The other grave-goods—accompanying several burials—included a bone button with V-perforation (fig. 38, 2) and polished axes, one triangular and flat, another thick-necked, of cylindrical section.

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[1] Coffey, *P.R.I.A.* xxvii (1908), 108, 109; Schmidt, 'Der Dolchstab in Spanien', in *Opuscula Archaeologica Oscari Montelio*, 69; Márton, *P.Z.* (1931) 18; Förtsch, 'Steinzeitlicher Dolchstab aus Bornitz bei Zeitz', in *Jahresschrift für die Vorgeschichte der sächsisch-thüringischen Länder*, iii (1904), 29.

[2] *Op. cit.*, fig. 7. I have been able to identify this piece in the National Museum collection.

[3] Reproduced also by Åberg, *La Civilisation énéolithique dans la Péninsule Ibérique*, figs. 128, 129, 130. The find-place is written Monte Abrahão.

The find from Folha is similar in consisting also of a dagger and a halberd-blade of flint. In this case it is, however, the dagger which has part of its surface polished.

We are not given a description of the other Portuguese blades. The Spanish example from Garrovillas is figured. It is longer in proportion to its breadth than the Abrão one and is not polished. At the base on either side is a small nick, that on the one side being again slightly higher than that on the other.

Schmidt gives us as further illustrations reconstructed drawings showing the Abrão weapons hafted (fig. 38, 4), the halberd-blade at right angles to a haft of pliable wood bound round with bast, the dagger-blade in the same straight line as its wooden handle to which it also is bound with bast. He further gives[1] a reconstructed drawing of an Acheulean *coup-de-poing* fitted to a handle of pliable wood similarly bound in position (fig. 38, 8 *a*). As a guide for the hafting of the flint dagger-blade he mentions the existence of such a weapon from the Swiss Lake Dwellings (*Pfahlbau von Vinelz im Bieler See*), while his authority for the hafted *coup-de-poing* is a similar weapon from Warnambool, West Victoria, Australia (fig. 38, 8 *b*), together with the fact that axes hafted in some manner similar to this are shown among the palaeolithic cave-paintings at Pindal in Northern Spain[2] (fig. 38, 7). Schmidt argues from the existence of these flint halberds that the metal halberds are translations of the type into the new material, though, while he believes that this transition must have occurred in the centre of the dolmen-culture in Portugal, he fails to find the intermediate types, since, as he rightly remarks, the Almeria examples are already fully developed. A further deduction which he makes from his tracing of the halberd back to the *coup-de-poing* is that the halberd must be regarded as a weapon native to Europe, though its development may also have taken place in the East—there also from a palaeolithic prototype. In the presence of the halberd and dagger of flint in the one grave, Schmidt sees an analogy to the same association of bronze weapons in the Canena find.

Further examples of the flint halberd may be added to those listed by Schmidt. They come: (1) from the Los Millares site which is dated to the fully-developed Copper Age. This one has also two nicks at the base. It is not polished;[3] (2) Malaga.[4]

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[1] Repeated from Forrer, *Reallexikon*, pl. 20, 3.

[2] These Professor Kühn regards as representations of boomerangs, as he informed me in conversation.

[3] Figured by Ebert, x, pl. 133.

[4] Mentioned by Bosch-Gimpera, *Préhistoire*, ii (1933), 257, footnote 1.

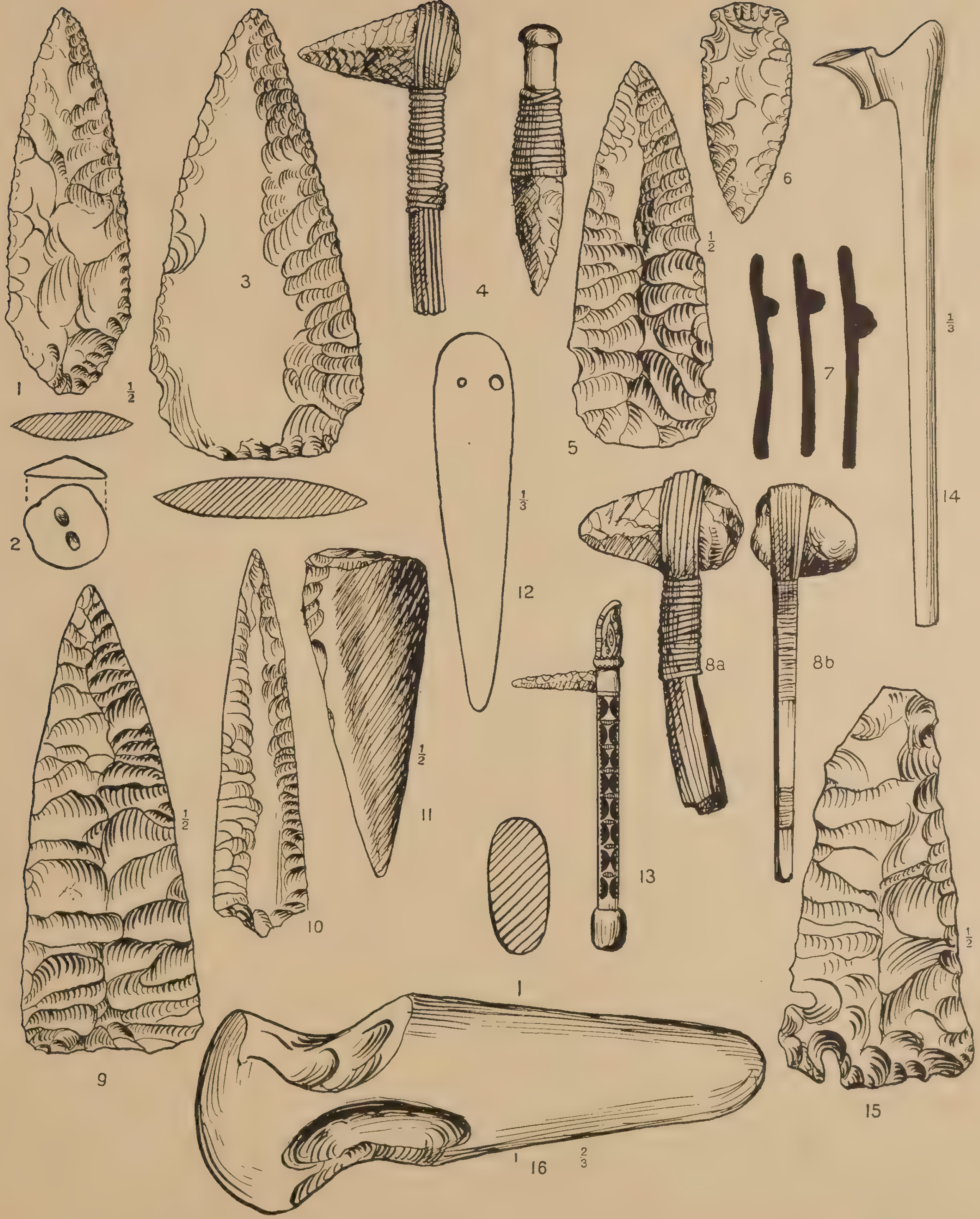
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Fig. 38. Halberds and analogous implements. (Nos. 1–10 after Schmidt; no. 11 after Menghin; no. 13 after Weule; no. 15 after Förtsch)

Other finds of flint halberds must be mentioned here. One is described by Förtsch[1] and comes from Bornitz near Zeitz (fig. 38, 15), from a district which produced many prehistoric finds. The material is bright-coloured flint, and the weapon is about 12·5 cm. in length by 5 cm. in breadth. The point has been broken. At the broad end are two niches: the one on the base itself, the other on the long side a short distance from the base.[2] These are so placed as definitely to suggest that the weapon was hafted as a halberd and not as a dagger.

A flint blade of outline a right-angled triangle comes from Surendorf, Kr. Eckernförde, Schleswig-Holstein.[3] And it is suggested that it was hafted as a halberd, and that such blades may be derived from others, also of flint, earlier in form and context.[4]

New light is thrown on the question of the flint halberd by a find from an excavation at Benisalâme in the Nile Delta.[5] The site is that of a neolithic settlement which is somewhat similar to the culture brought to light by the excavations of Miss Caton Thompson in the Fayum. It differs from all other Egyptian neolithic sites in being completely free from the presence of copper. Menghin dates the culture to about 4000 B.C.

The halberd (fig. 38, 11) is unique in Egypt and, indeed, is of a form known only from the Iberian Peninsula. It is 12·4 cm. long, 4·9 cm. broad at the base, and 1·1 cm. thick. Both sides are polished. Junker says that the weapon may have been hafted either as a dagger or as a halberd. Menghin favours the latter alternative because of the thickness of the blade, and because of its asymmetry. It is suggested that the whole surface of both faces was formerly polished, and that the now unpolished parts are due to the breaking off of the original surface and its secondary retouching.

The culture, referred to by Menghin as Merimdian, is important because of its European connexions, which are evidenced by elements other than the occurrence of the flint halberd-blade.

In particular the pottery is similar to the Western European group of neolithic pottery typified by that of the Michelsberg culture. Evidencing the closeness of this connexion is the occurrence of pottery spoons at Benisalâme;

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[1] *Op. cit.*

[2] I have handled the cast of this weapon in Halle Museum. The original is still in private possession. Förtsch's illustration is evidently a photograph of the cast.

[3] *Geschichte Schleswig-Holsteins*, 305, Abb. 375.

[4] *Ibid.*, Abb. 269–72.

[5] Menghin, 'Die neolithische Ansiedlung von Merimde-Benisalâme und ihre Bedeutung für die Entwicklung des Neolithikums in Westeuropa', in *Proceedings of the First International Congress of Prehistoric and Protohistoric Sciences, London* (1932), 177; Idem, *Weltgeschichte der Steinzeit*, 360, pl. 41, 11; Junker, 'Vorläufiger Bericht über die zweite Grabung der Akademie auf der vorgeschichtlichen Siedlung Merimde-Benisalâme', with addendum by Menghin, in *Anzeiger der Akademie der Wissenschaften in Wien* (1930), 21.

these occur also on the continent in Michelsberg contexts and in England as a feature of Windmill Hill pottery.[1]

Further features showing cultural connexions between neolithic Europe and the Egyptian site are, according to Menghin, the occurrence in both of the stone axes of cylindrical cross-section (*Walzenbeil*) and the important place occupied by swine in the economy of life. Pig-bones were found frequently at Benisalâme, and pending the specialist report on these it is thought that they are remains of domestic swine. Swine play a large part in the economy of the Swiss Lake-dwellings as is evidenced by the frequent finds of pig-bones there, and by the finding of boars' tusks used as ornamental objects —a feature which may have had a religious significance. Remarkable in this connexion is the fact that among the few grave-offerings from Benisalâme is a boar's tusk.[2]

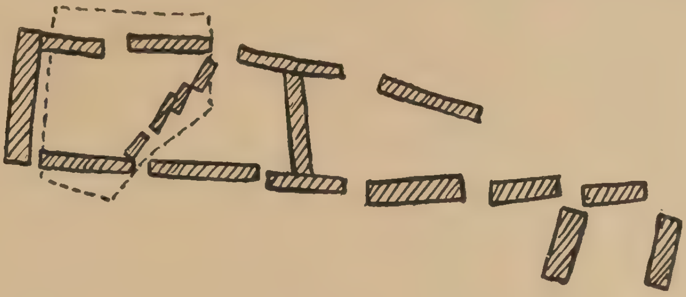

Fig. 39. Plan of megalith at Lestridiou, Finistère (after du Chatellier)

Stone or flint halberds from modern contexts are, of course, well known. I reproduce only one[3] from the Admiralty Islands (fig. 38, 13).

The excavation of a megalith of *galerie couverte* type at Lestridiou, Finistère, produced a stone weapon which, by reason of its shape and the provision for hafting it near the broad end, must be regarded as a halberd, and it is therefore an important addition to non-metallic halberds.[4] In the published account of the excavation the weapon in question is not specifically mentioned, but I have been able to study the material from the megalith in the Museum at St. Germain.

The monument (fig. 39) is oriented NNW.–SSE. and consists of two main portions; a cist is formed at one side by two slabs which stand at right angles to the main structure. In this cist were found pottery fragments and some skeletal remains. The main portion of the finds, however, came from the two long chambers. Included in the finds are several stone axes of tapering section, a stone bracer, a bone, and three pots. Two of these are of the same type—round-bottomed, with incurved neck (the one about 7·5 cm. high, the other about 10 cm.), while the third is about 8 cm. high and biconical in form.[1]

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[1] Piggott, 'The Neolithic Pottery of the British Isles', in *Arch. Journ.* lxxviii (1931), 77.

[2] It may here be remarked that in a cist (grave 9) in the yet unpublished Bronze Age cemetery at Keenogue, Co. Meath, were found with the skeleton of a child a food-vessel and a boar's tusk.

[3] K. Weule, *Der Krieg*, 51.

[4] du Chatellier, 'Dolmen à galerie de Lestridiou (Finistère)', in *Bulletin monumental* (1877), 184, and *Époques préhistoriques*, (1889), 176.

The halberd is 13·5 cm. long (fig. 38, 16). One end comes to a wide curved edge (5 cm. broad) while the other end terminates in a blunt point (2 cm. broad). The cross-section is elliptical. The axis of the weapon changes direction at a distance of about 10 cm. from the point and the portion towards the butt-end forms an angle of approximately 165° with the front part. At this point where the change in direction of axis occurs flakes are taken off both sides of the axe as an aid to the hafting of the weapon. It is obvious that this hafting is too close to the broad end of the weapon to allow that end to be of service and so we are precluded from regarding it as an axe. Since the effective end of the weapon is pointed we must regard it as a halberd. The stone is poor quality, fine-grained sandstone and this, as well as the fact that neither end is well pointed, indicates that the weapon cannot have been intended for use. We must regard it as having been, as so many halberds were, a symbol of authority.

The next type of non-metallic halberd with which we must deal is that made from antler. In this connexion we do not include the simple antler pick which has already been mentioned when summarizing Coffey's suggestions. The halberd proper of antler is in its developed form a more elaborate weapon and has been brought to notice by Márton (fig. 40, 8–12).[2]

That the imitation in antler of weapons in other materials was not confined to halberds Márton shows by figuring a perforated hammer made from antler, which is evidently a copy of a stone one. He then gives examples of antler halberds as follows:

> 1. found by Professor Ottokar Kadics in the course of his excavation near Kesztölc, in the Pilisgebirge (Kom. Esztergom). The weapon, photographed mounted on a wooden handle, is compared with the bronze example from Kom. Hont. The relationship between the two is remarkable. The antler example is of fine workmanship, well polished, and the boring for the shaft is oval in section. Most remarkable is the upward trend of the weapon towards the point—a feature to be noticed in the metal halberds in Hungary (as in so many from other districts) and also in the other antler halberds to be described below;
>
> 2. from Salmanovo (now in the Museum of Schumen in Bulgaria), gives more definite witness of the intentional upward trend of the blade because the prehistoric worker before cutting the shaft-hole marked its direction on the side of the weapon;

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[1] Illustrated in du Chatellier, *La Poterie*, pl. 1, 4.

[2] *Op. cit.*

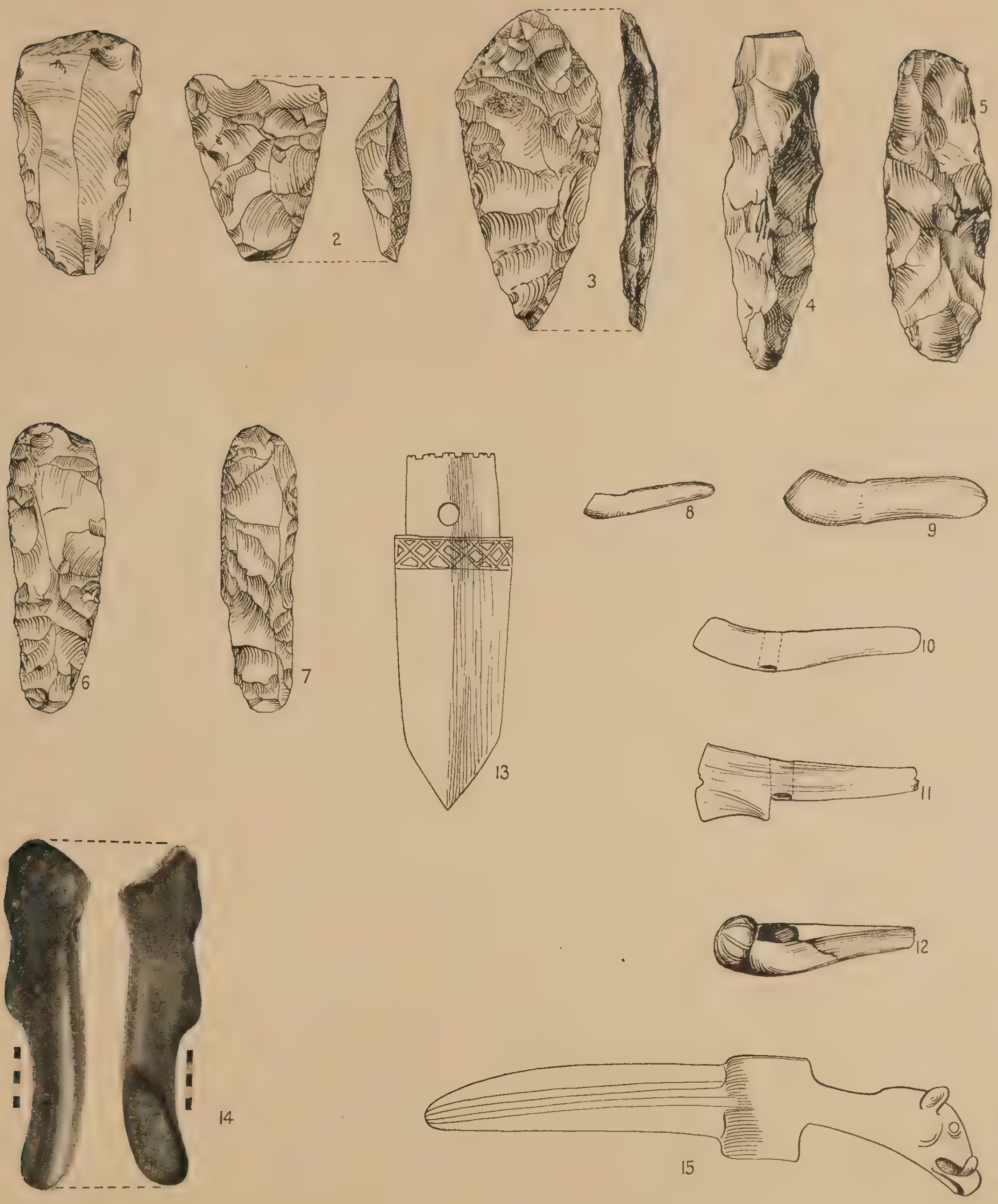

Fig. 40. Halberd-like implements. Nos. 1–7. Flint, Northern Ireland ($\frac{1}{3}$): 1, Larne; 2, Strangford Lough district; 3, Co. Derry; 4, Culbane, Co. Derry; 5, Gortgole; 6, Portglenone; 7, Carnearney, beyond Burnish. Nos. 8–12. Antler, Hungary (after Márton): 8, Kesztölc; 9, Salmanovo; 10, Tell Denev; 11, Denev; 12, Babska. No. 13. Jade, China (after Aston and Gray) ($\frac{1}{3}$). No. 14. Ückerhof, Pyritz (by courtesy of the Provinzial-Museum, Stettin). No. 15. Bronze, South Russia ($\frac{1}{3}$)

3. from Tell Denev, near Salmanovo. This shows still more the tendency exhibited by the two foregoing towards a flat blade with a wide point. We thus see that these weapons swing between halberd- and axe-like forms;
4. also from Denev, and similarly shows the flattening of the blade;
5. from the settlement at Babska. This differs from the others listed in having a rectangular shaft-hole, and Márton holds it to be a later form, and that this is also proved by the hole being well cut—showing that metal tools were used.[1]

We may here mention an example of an axe or halberd of antler which comes from Ückerhof, Pyritz,[2] now in the Museum at Stettin. It is remarkable because of the ornament of a dot surrounded by one or, more usually, by two concentric circles which occurs over more than half the surface of its sides. Near the base is an incised T-design. The shaft-hole is remarkably small (diameter 1·7 cm.) in comparison with the size of the axe (length 27·2 cm.). Though not so pronounced in this weapon there is a tendency towards an upward-inclined blade in relation to the direction of the shaft (fig. 40, 14).

Two other rather puzzling weapons must now be mentioned. Casts of both are in the Römisch-Germanisches Central-Museum at Mainz. I have seen these copies but not the originals, and the drawings I give are from tracings of the illustrations in the Mainz Catalogue. The first is a club of copper (?) which ends in a pointed portion at right angles to the haft.[3] The information available is that it was found near Thale a. Harz, Prov. Saxony (fig. 38, 14). The second is evidently of stone and is 22·5 cm. long. It tapers asymmetrically towards one end and is perforated by two holes at the other, a fact which suggests that it must be regarded as a halberd rather than an axe. It comes from near Bacharach, Kr. St. Goar, Coblenz (fig. 38, 12).

These various examples of weapons of non-metallic substances resembling halberds which we have here given, though not numerically large, are sufficiently widely distributed to make it certain that there existed many halberd-like weapons other than those in metal held by our museums. Some of them may be prototypes; some may be copies of the metal ones. Of the examples we have listed the flint blades from the Nile Delta and from the Iberian Peninsula are the only ones which we can regard as prototypes of the copper halberds, though indeed some of these also (e.g. Los Millares) are as late as the earlier copper halberds. The flint halberd of Bornitz as well as those of antler from the Danubian lands we must regard as degenerations of the metal halberds.

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[1] Márton discusses the question of the relative age of the rectangular and circular varieties of shaft-hole. The former type is found in the main in tools and weapons from the period of the Late Neolithic and Early Bronze Age, but he further states that the feature is widely, chronologically and geographically, distributed, and is not as infrequent as is held by Schroller. Nor does he agree with Schroller that the rectangular form belongs to a time when the round boring was still unknown. The occurrence of such a feature in a Maglemose context is unique among the material of that period.

[2] Kunkel, *Pommersche Urgeschichte in Bildern*, pl. 32.

[3] The following references mention the object, but are not available to me: *Zeitschrift des Harzvereins für Geschichte und Altertumskunde*, lix (1926); K. Schirwitz, *Zur Vorgeschichte des Harzes*; *Katal. d. Präh. etc., Ausstellung Berlin* (1888), 527. It is also figured and described by Lindenschmit, *A.u.h.V.* iii, 6, 1, 7.

The blades from the Bann mentioned by Coffey we must consider more fully. In deciding whether these can be regarded as the prototypes of the copper halberd we must bear in mind the essential differences between an axe, a dagger, and a halberd. The halberd is differentiated from the dagger by being mounted approximately at right angles with its shaft, while the dagger is mounted in a straight line with it. In the case of many examples both of stone and of metal it is by no means easy to decide whether the object was hafted as a dagger or as a halberd. When, however, we have succeeded in deciding this question we must next decide whether the term axe or halberd can be applied to the weapon hafted at right angles. There is one essential difference which enables us to decide this: the axe is a weapon which has as its effective end a broad edge, the halberd has, on the contrary, a point. If then we have a weapon of which it can be said that it is hafted approximately at right angles to the handle and that it tapers towards a narrow 'business-end', we may justifiably regard such a weapon as of halberd type.

Coffey has figured one flint blade which he regards, because of its flat shape and general outline, as analogous to the copper halberds of the earliest type—a fact which he thinks suggestive as to the hafting of the weapon. He doubts if the stouter pick-like type of flint implements were mounted on handles. He is particularly restrained in his views on the relationship between the flint and the copper blades, and, while not suggesting that the latter are derived from the former, he holds that the prevalence of a stone, pick-like implement in the neolithic period would help to explain the prevalence of the metal halberd in the copper period.

Accompanying this paper are several figures of flint implements (fig. 40, 1–7), some of which are of the type mentioned by Coffey. Nos. 1 and 2 are not unlike that in Coffey's figure. No. 3 is more of the type of spear or javelin head. No. 1 could well have been used without a handle; no. 2, however, is sharp at the butt-end suggesting its having been fitted to a handle. Of no. 3 we can say that it certainly was hafted. Of these three specimens, even if we admit the probability of their having been hafted, we cannot be certain if they were hafted in a line with or perpendicular to a shaft; but in the case of nos. 1 and 3 a slight thinning of the substance of the implement near the base, transverse to the length of the blade, suggests a haft at right angles. No. 2, if hafted, must certainly have been fitted at right angles to the haft. It is in no way suitable as a javelin-head. Even if this were hafted in the same manner as a flat axe (in an 'elbow' of timber) it would still, because of its form, suggest a halberd.

The other, pick-like, form of implement which we figure—nos. 4 to 7—is long and narrow in outline and in every case suggests its having been used on a gad form of handle—somewhat like a modern 'gad-punch'. This is suggested by the form and is strengthened by a narrowing of the substance of the implement just below the base, making it suitable for attaching to it a pliable wooden handle bound round with something such as bast, as suggested by Schmidt in the case of the Iberian material. That such a type of handle for stone tools was known at an early date in Ireland is proved by the occurrence here of grooved stone mauls of the type known as 'mining-hammers'; and, while evidence is lacking in Ireland for an exact dating for these, we must conclude from the foreign finds (e.g. Portugal and Italy) that at least some of them belong to the earliest metal period. Indeed, that some such type of handle was generally known we must conclude from Schmidt's arguments regarding the hafting of the *coup-de-poing*. Further, this same pick-like tool, which we find so frequently in Northern Ireland, and which in its earliest occurrence we must regard as a modified palaeolithic survival in Campignian contexts, is of wide distribution.[1]

It is thus justifiable to regard as established the existence of pointed flint tools hafted transversely to the shaft. It is further evident that in Ireland the distribution of these tools is centred in the north-eastern counties—a fact to which it will be necessary to refer again when speaking of the evolution of the copper halberd. That such flint tools began well before the metal-using period will be readily admitted; that they continued down to a date which must have coincided with the first of the metal tools is not likely to be denied, because such tools are so frequently found on kitchen-middens, which are particularly well known as sites where earlier types survive to later periods.[2]

Distribution

Ireland (map, fig. 41; halberds, figs. 42-53).

The distribution of the halberd in Ireland has been dealt with to some extent by Fitzgerald.[3] He has, however, dealt with only a comparatively limited number of examples. His distribution map shows copper axes and halberds, and the number of finds shown under the two headings is 74. It is therefore not surprising that his conclusions are different from those indicated by a distribution map of halberds only. Fitzgerald draws the inference that there is a concentration of copper implements in the south-west and that this corresponds to the copper-mining areas of Cork and Kerry. He holds that an absence of copper implements over large areas of the Central Plain indicates a continued absence of settlement in these parts during the earliest part of the Bronze Age. According to his data no copper axes or halberds are forthcoming from the counties of Carlow, Kildare, Westmeath, and Longford. The distribution map which is presented here gives finds in two of the counties—Kildare and Longford—which Fitzgerald found blanks. Co. Westmeath remains without any authenticated find of a halberd, but we must balance against this the fact that at least two halberds among those we list as having no location are probably from Co. Westmeath, having been part of the Killua Collection which was formed in that county.[1] Although Co. Carlow does not produce any find of a halberd, we cannot conclude that it was free of settlements in early Bronze Age times, because it has produced many burials with food-vessels some of which may be attributed to that period.

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[1] Many of them are represented in Evans, *Stone Implements*, from Great Britain, as well as in Clark, *The Mesolithic Age in Britain*. They occur in Campignian sites in Northern Europe.

[2] While correcting the proofs of this paper I have noticed Nordman's article in *Finsk Museum*, xxii (1915), 39, in which he draws attention to Danish flint blades, one of those figured by him being similar to some of our North of Ireland examples. He sees in them a further example of the connexion between the Danish Stone Age antiquities and those of copper and bronze in Central and Southern Europe.

[3] *The Historical Geography of Early Ireland*, 66 map, 61.

The number of finds shown on our map is 60, but in considering them we must to some extent consider also the other available data which, though not sufficiently full to justify us in placing the finds on the map, are nevertheless indications of the locality to which such examples may be ascribed. Thus we have in the halberds of the Limerick Museum a group which came into that museum from the Dunraven Collection and most of which must be regarded as of Limerick origin.

The general impression conveyed regarding the distribution of halberds is that the weapons tend to concentrate in the Central Plain or in extensions of it beyond the enclosing mountains. Such an extension is the 'Golden Vale' in the South. The rich lands of the centre of the country must therefore have been the most attractive areas even in Bronze Age times—a conclusion different from that put forward by Fitzgerald though not really at variance with that suggested by his map. Cork is well studded with finds—there being a total of six, three of which are not, however, more closely localized. One of the Cork halberds comes from Mallow, where the rich lands to the north communicate through the gap between the Boggeragh and Nagle Mountains with the fertile lands of that part of Cork immediately south of these mountains. Another comes from Kanturk at the foothills of the mountains, while two come from the western mountain valleys, and finally one from the upper reaches of

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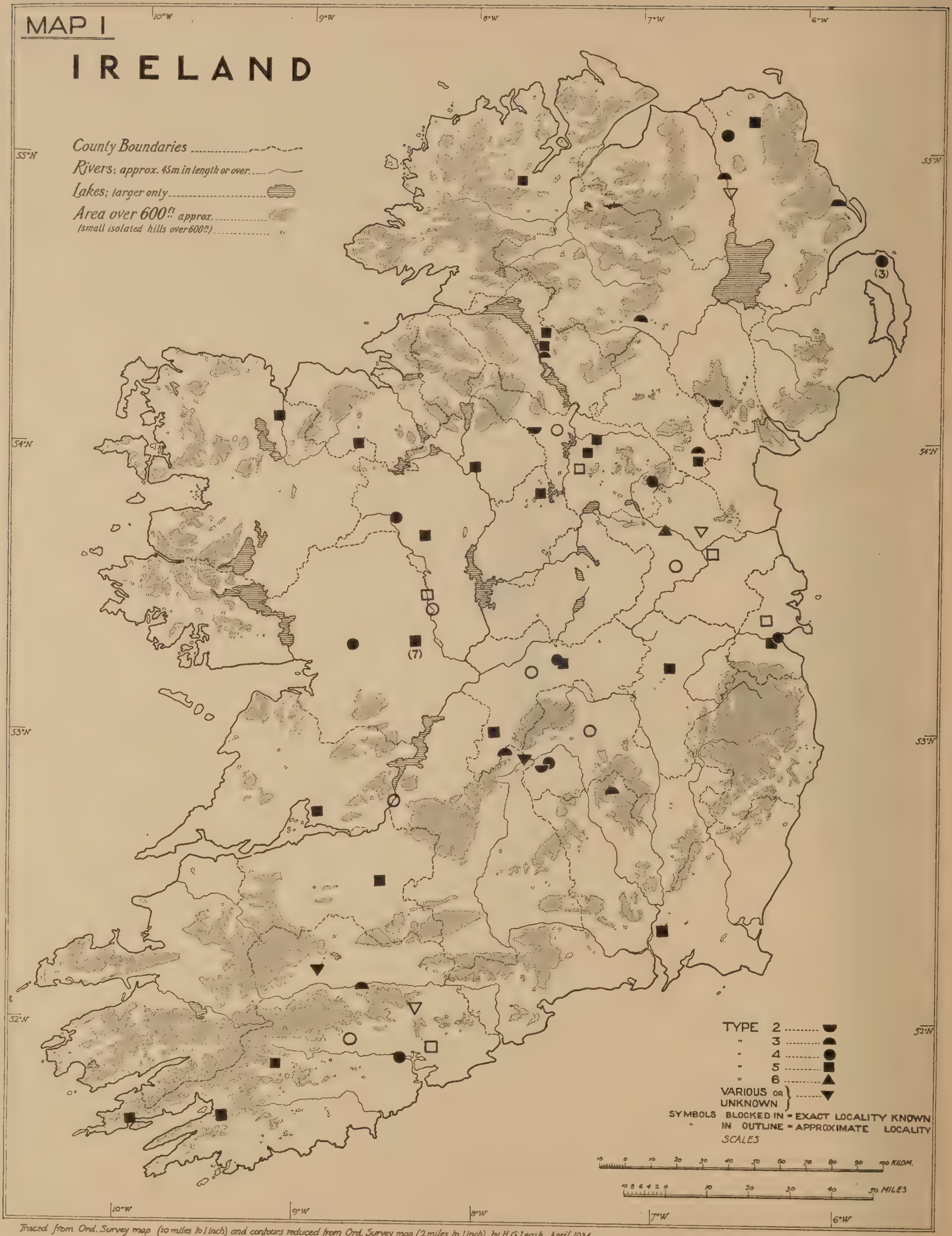
[1] One of these is that shown by Professor Macalister in his *Ancient Ireland*, fig. 2.


MAP I
IRELAND
County Boundaries
Rivers; approx. 45m. in length or over
Lakes; larger only
Area over 600ft. approx.
(small isolated hills over 600ft.)
10°W
9°W
8°W
7°W
6°W
55°N
54°N
53°N
52°N
(3)
(7)
TYPE 2
" 3
" 4
" 5
" 6
VARIOUS OR UNKNOWN
SYMBOLS BLOCKED IN = EXACT LOCALITY KNOWN
" IN OUTLINE = APPROXIMATE LOCALITY
SCALES
10 0 10 20 30 40 50 60 70 80 90 100 KILOM.
10 8 6 4 2 0 10 20 30 40 50 MILES

Traced from Ord. Survey map (10 miles to 1 inch) and contours reduced from Ord. Survey map (2 miles to 1 inch) by H. G. Leask, April 1934.

Fig. 41. Distribution of Halberds in Ireland

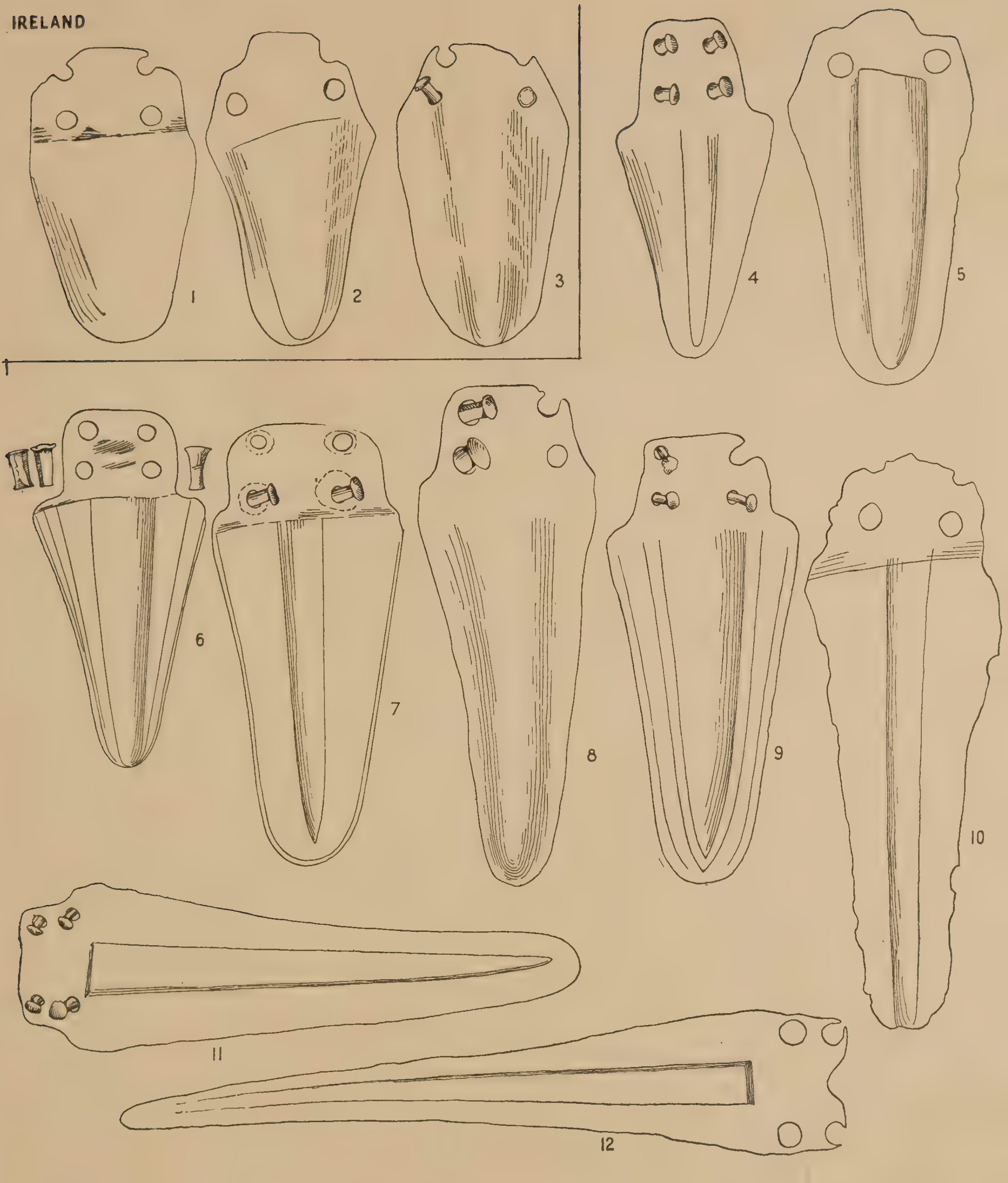

IRELAND
1
2
3
4
5
6
7
8
9
10
11
12

Fig. 42. Nos. 1-3, Type 1 ; nos. 4–12, Type 2 (⅓)

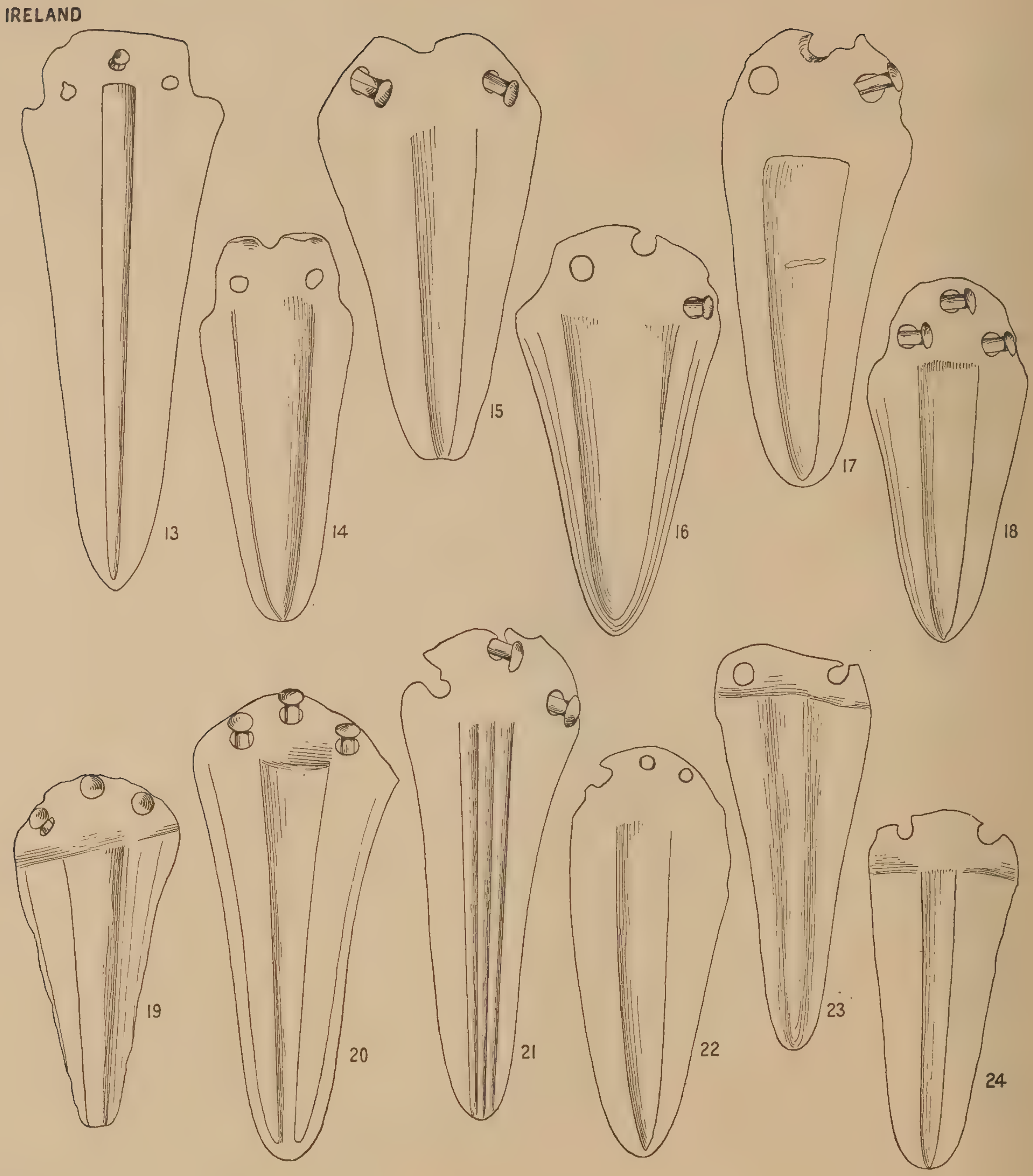

IRELAND
13
14
15
16
17
18
19
20
21
22
23
24

Fig. 43. All Type 3, continued (⅓)

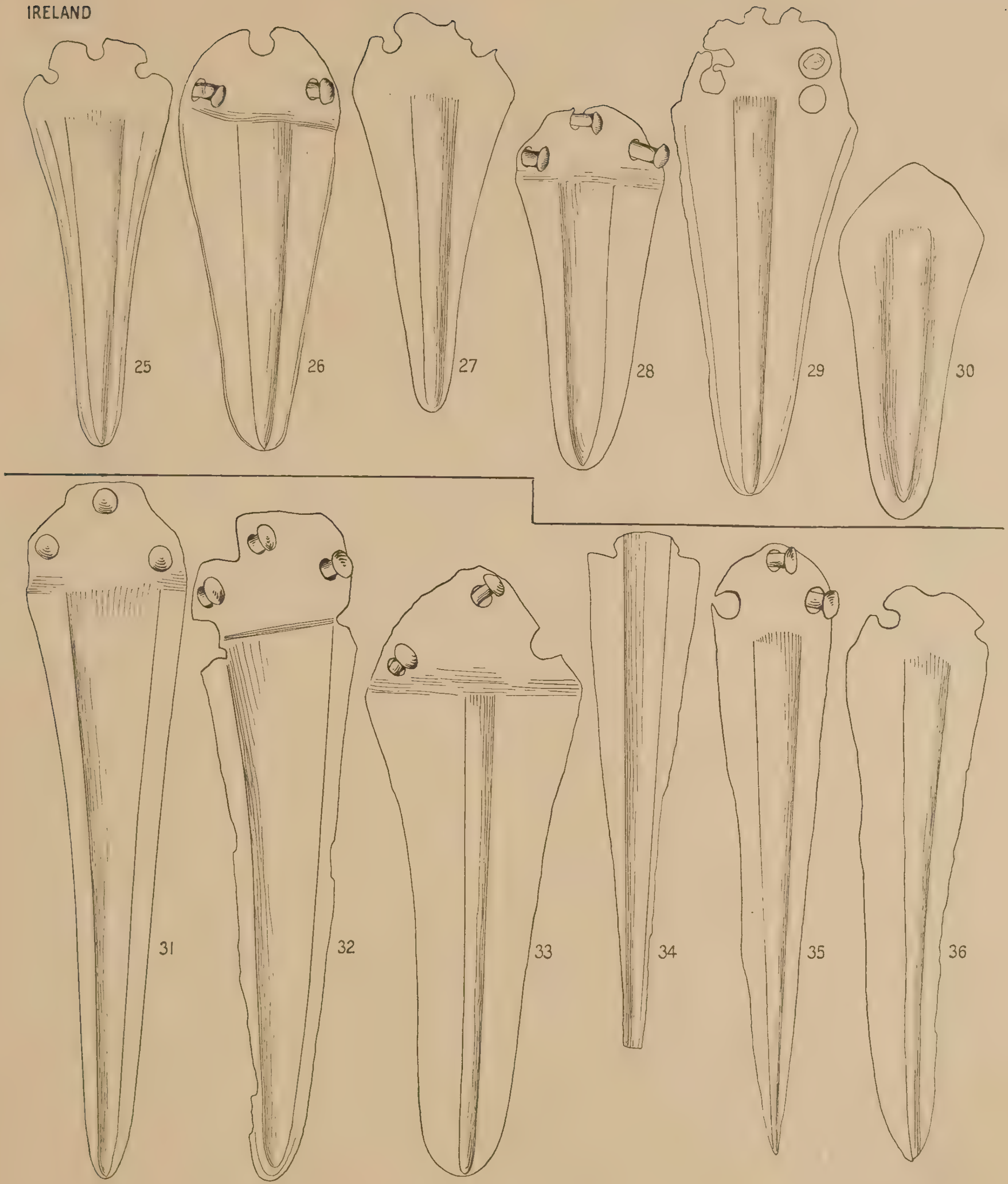

IRELAND
25
26
27
28
29
30
31
32
33
34
35
36

Fig. 44. Nos. 25–30, Type 3, continued; nos. 31–6, Type 4 ($\frac{1}{3}$)

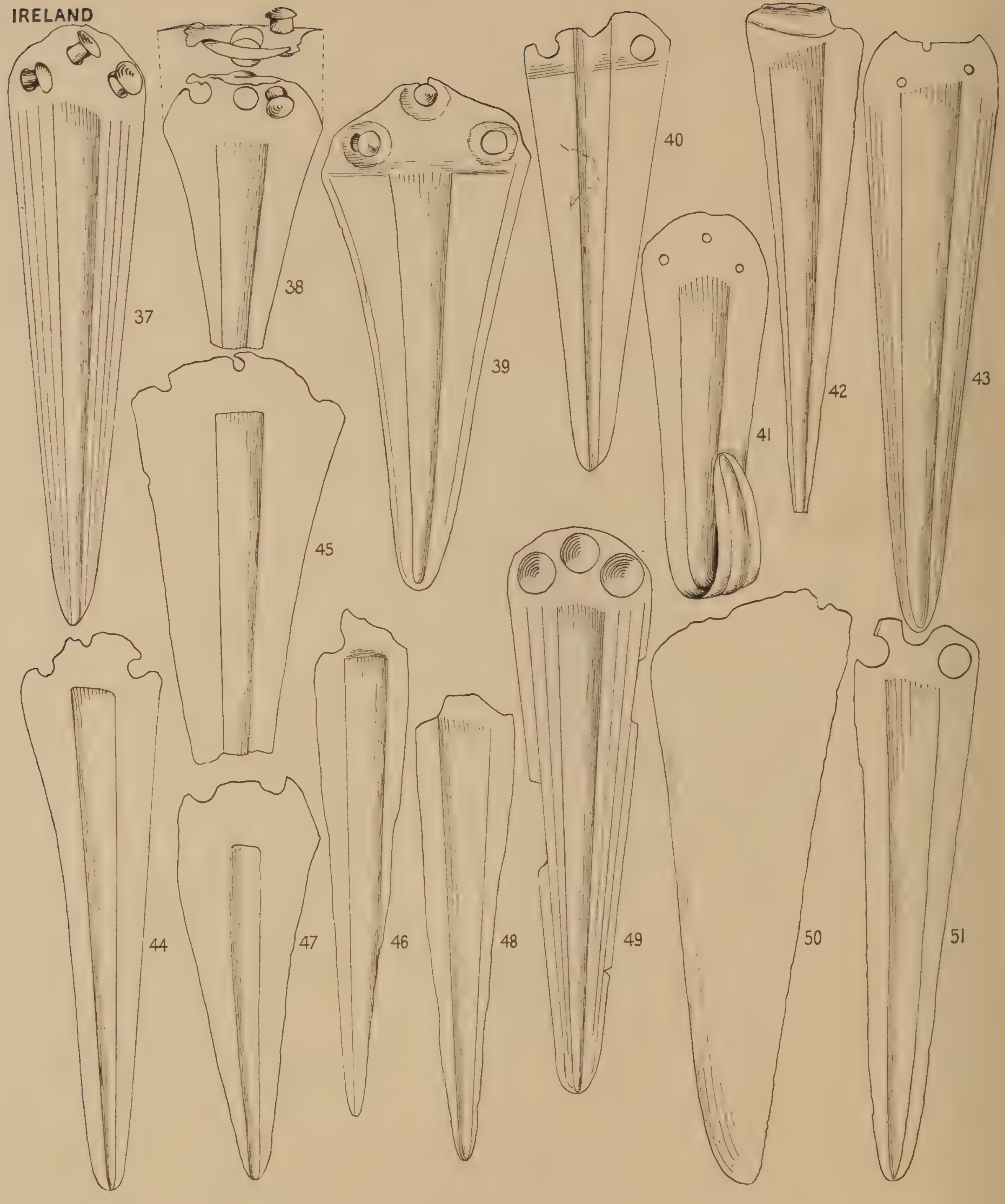

IRELAND
37
38
39
40
41
42
43
45
44
47
46
48
49
50
51

Fig. 45. All Type 4, continued ($\frac{1}{3}$)

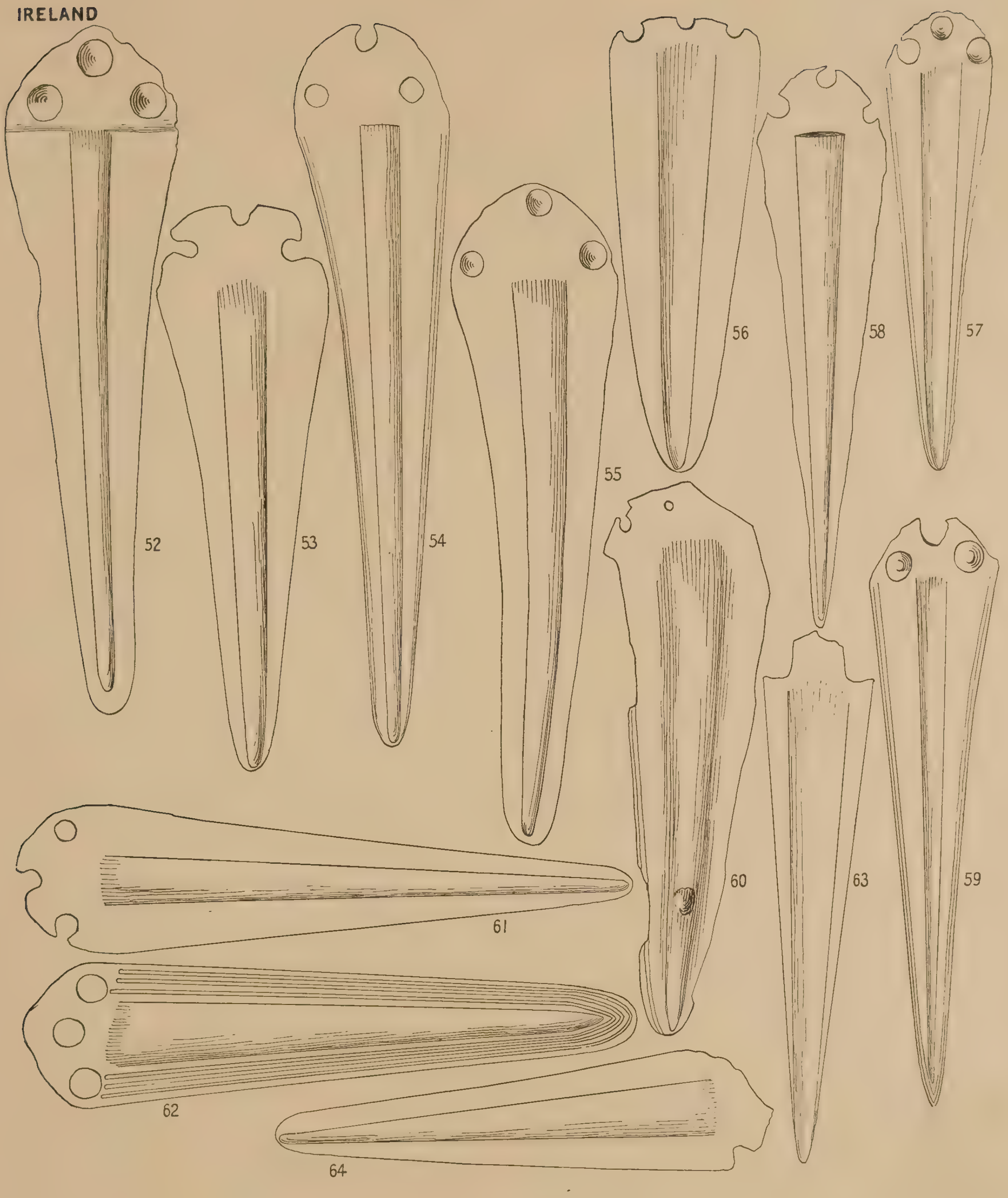

IRELAND
52
53
54
55
56
58
57
60
63
59
61
62
64

Fig. 46. All Type 4, continued ($\frac{1}{3}$)

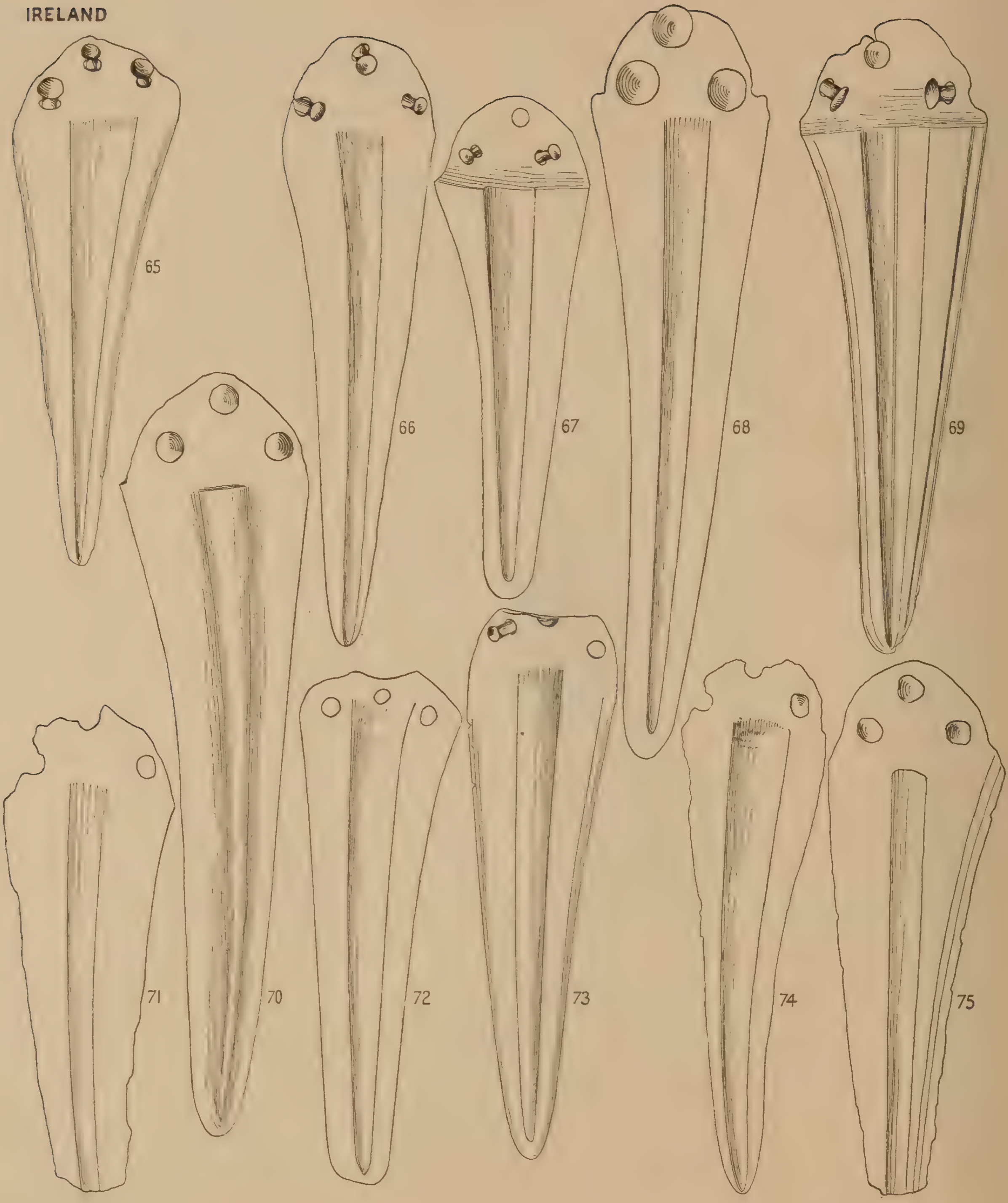

IRELAND
65
66
67
68
69
70
71
72
73
74
75

Fig. 47. All Type 5 (⅓)

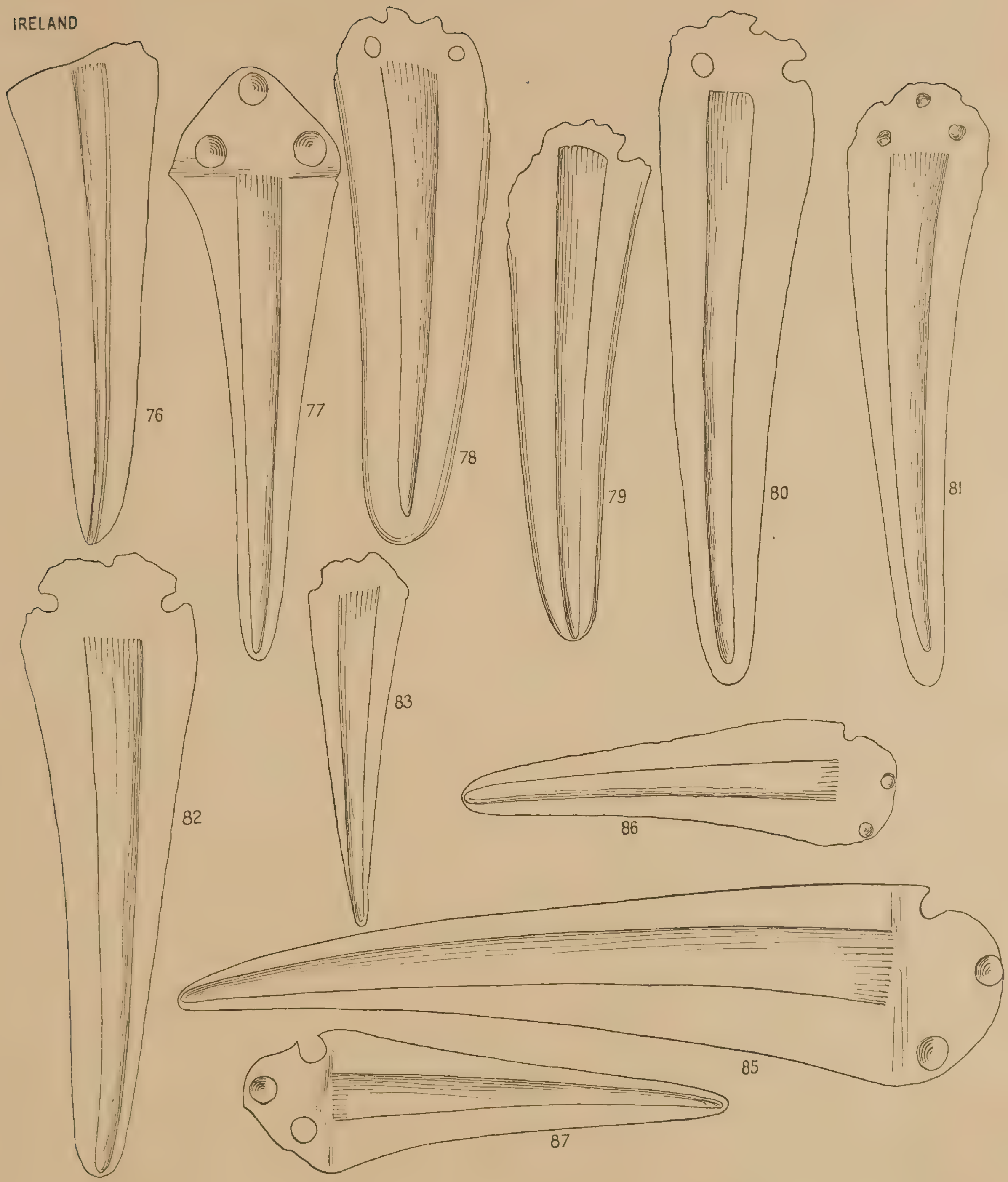

IRELAND
76
77
78
79
80
81
82
83
86
85
87

Fig. 48. All Type 5, continued (⅓)

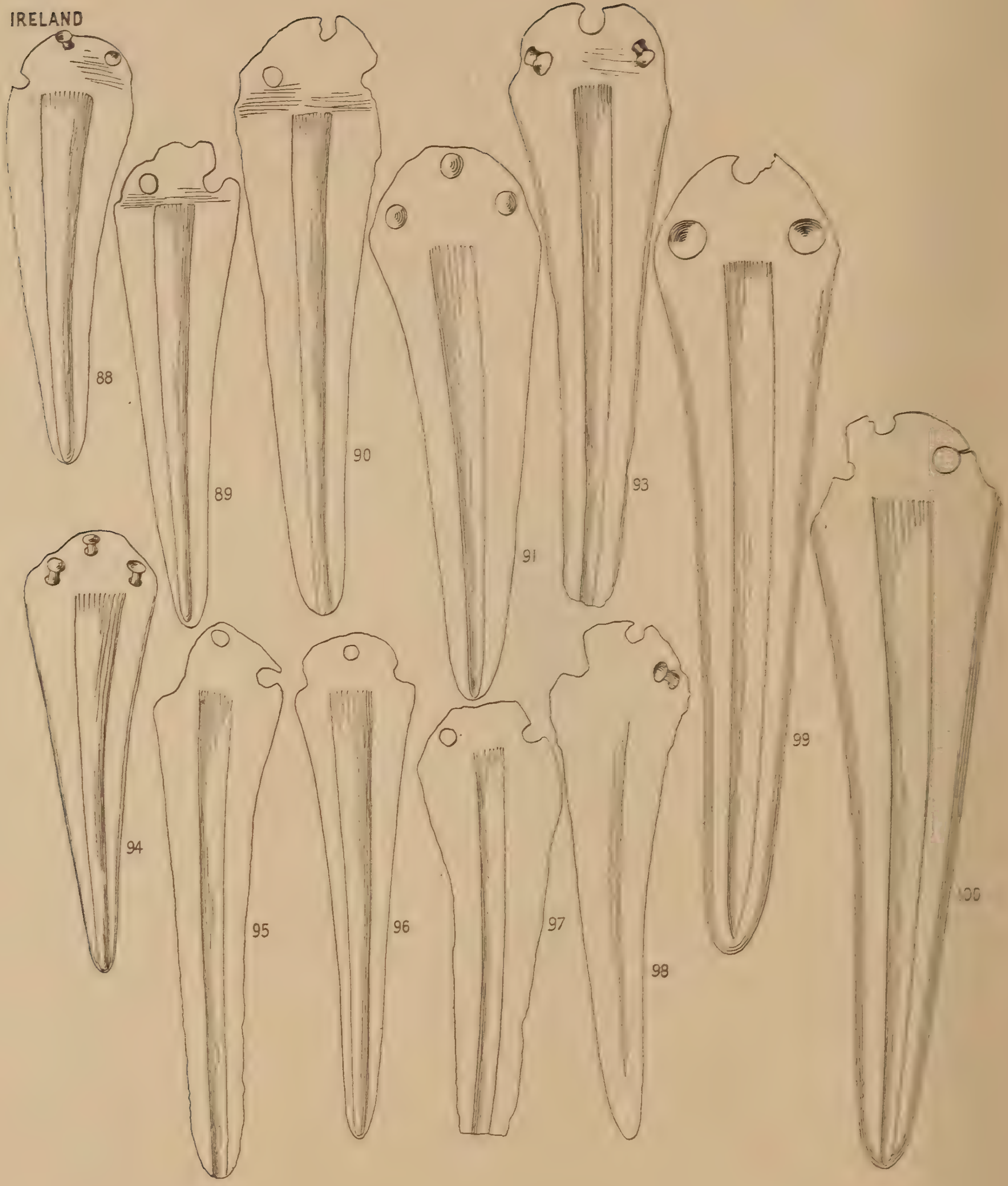

IRELAND
88
89
90
91
93
94
95
96
97
98
99
100

Fig. 49. All Type 5, continued (⅓)

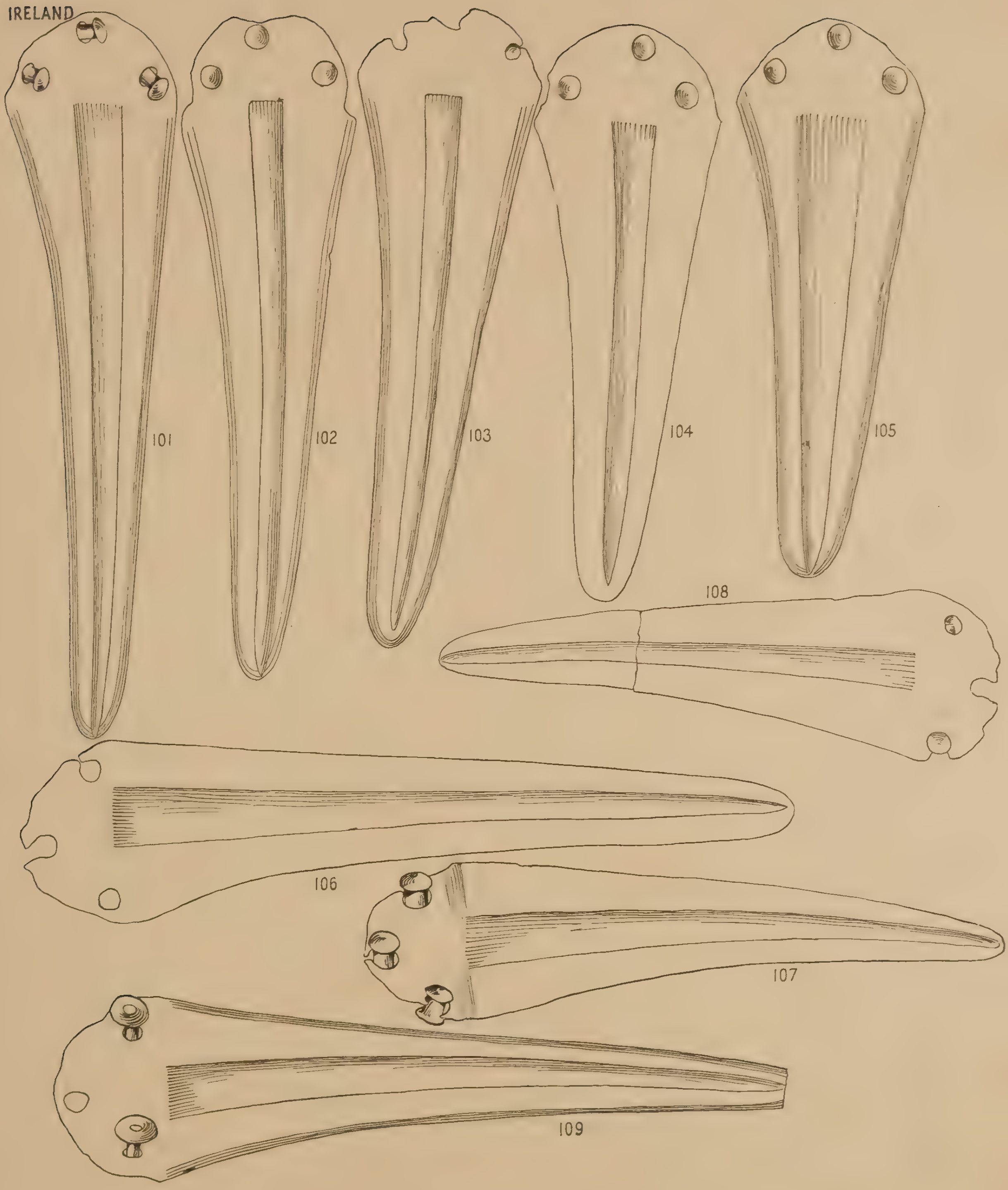

IRELAND
101
102
103
104
105
108
106
107
109

Fig. 50. All Type 5, continued (⅓)

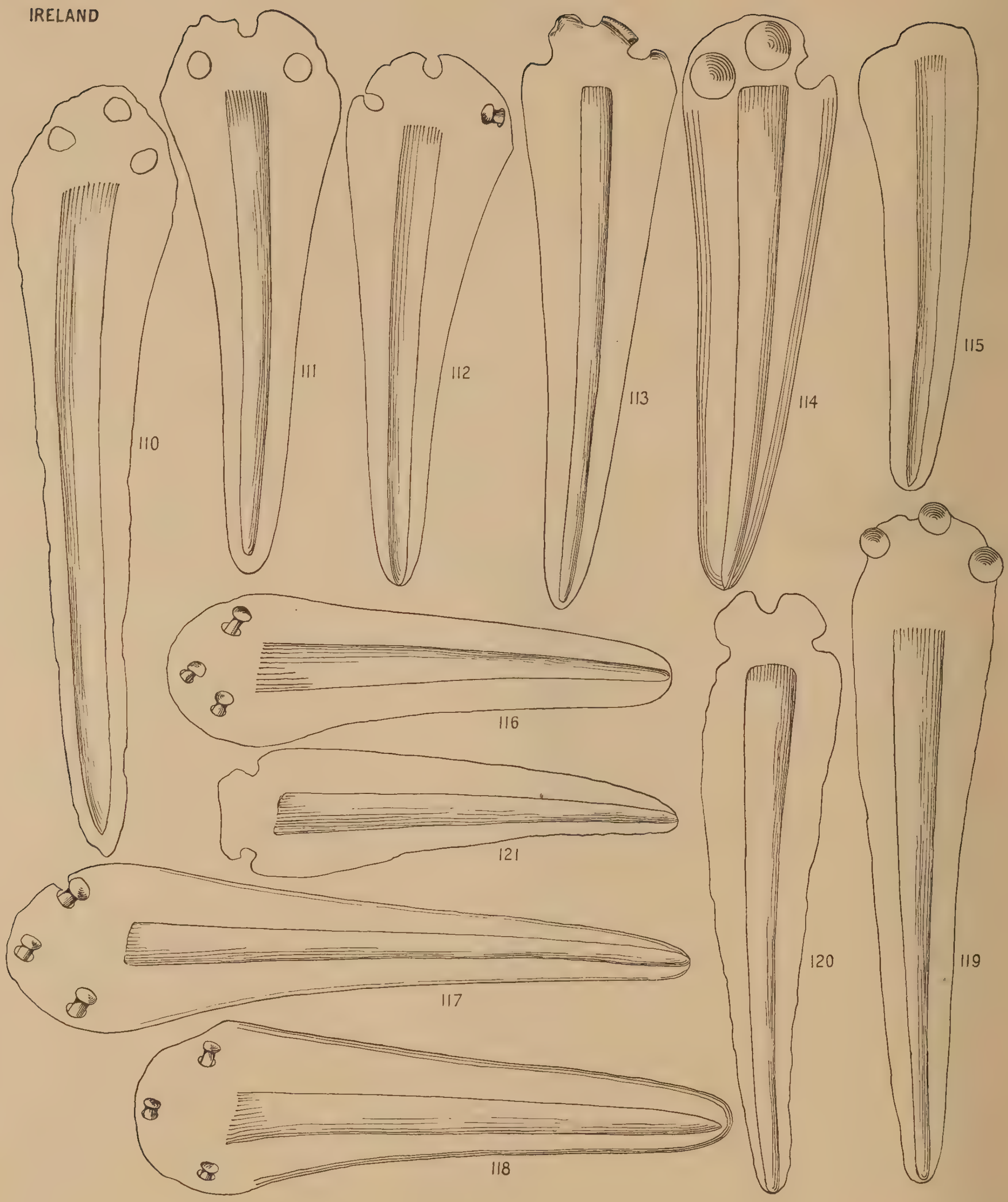

IRELAND
110
111
112
113
114
115
116
121
117
118
120
119

Fig. 51. All Type 5, continued ($\frac{1}{3}$)

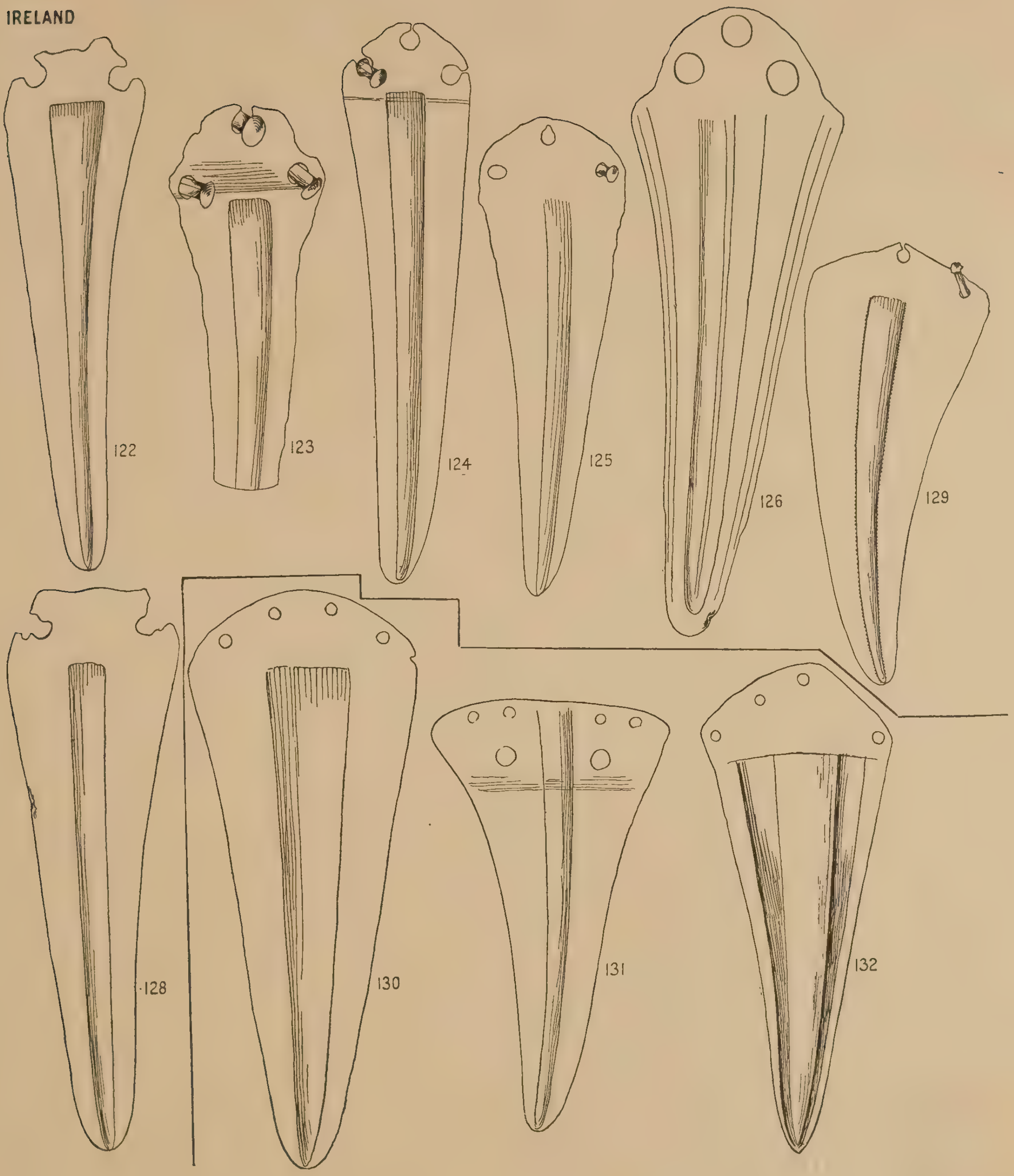

IRELAND
122
123
124
125
126
129
128
130
131
132

Fig. 52. Nos. 122–9, Type 5, continued; nos. 130–2, Type 6 ($\frac{1}{3}$)

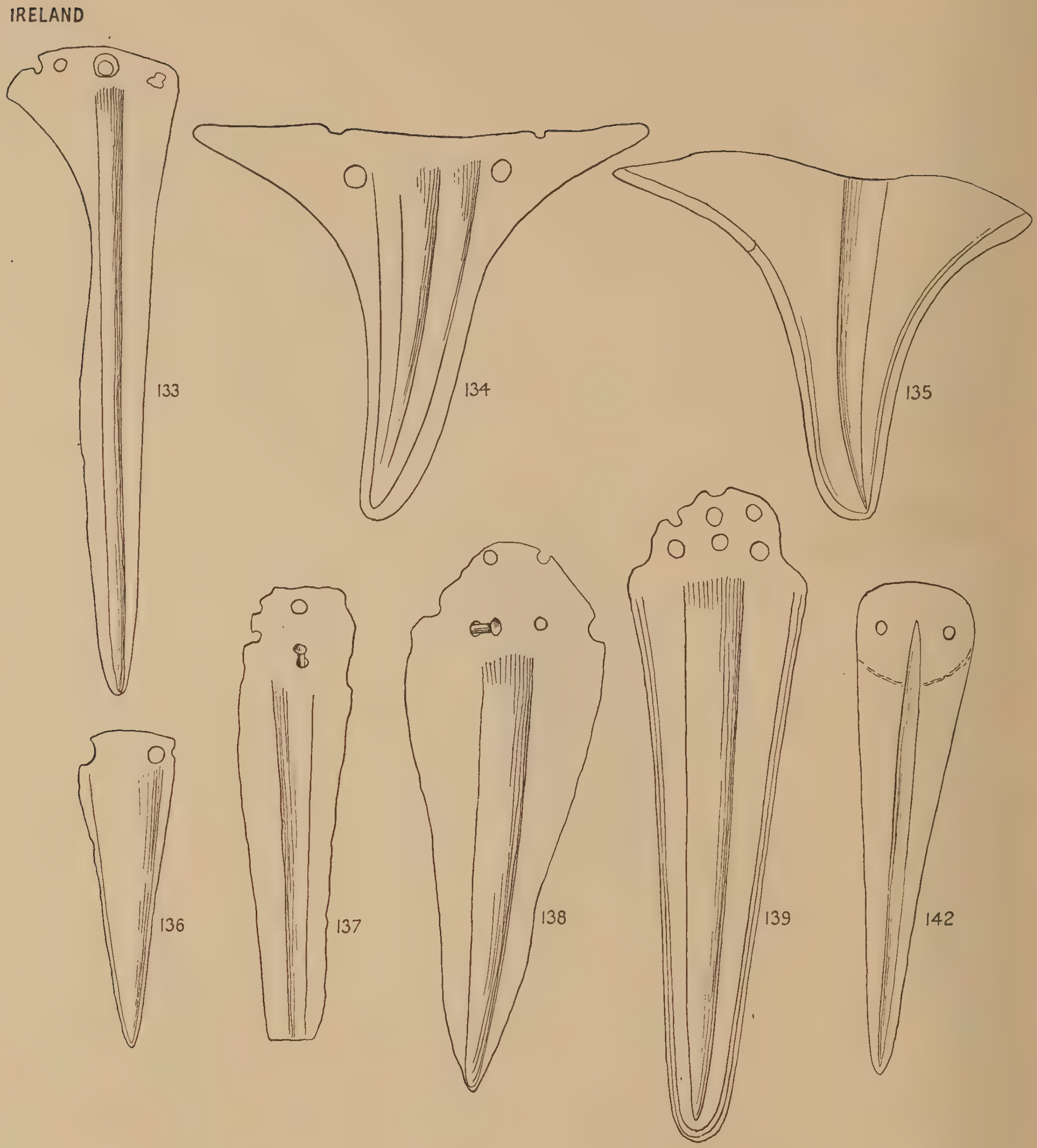

IRELAND
133
134
135
136
137
138
139
142

Fig. 53. Various forms ($\frac{1}{3}$)

the estuary of the Lee. The western extension of the Central Plain (i.e. Eastern Connaught) has also a large number of find-places, and from one of them comes the group of seven halberds from Hillswood, Co. Galway. A further concentration of finds occurs along the northern part of the Central Plain, where, among the small hills of Cavan and the neighbouring counties, it touches the mountains which divide it from the north-eastern region, where again finds are well represented.

These are the results gained from a study of halberd-distribution generally in Ireland, but we must now consider their distribution according to the various types into which we have divided them. None of the three examples in Type 1 has a known locality, but two of them are in the Belfast Museum and have been acquired from northern collectors. The same is true of no. 4, the first specimen of Type 2, while no. 5 comes from Co. Armagh and no. 6 from Co. Cavan. The only other localized specimen of Type 2 is no. 12, which comes from Leix, though, as already remarked, no. 11 which is in Limerick Museum may be regarded as from the Co. Limerick area. In the examples of Type 3 we have a definite preponderance of those from the northern area; there are seven localized specimens and of these five come from the north. In the case of all types other than the first three there is no concentration in the north of the country—in fact the distribution is definitely contrary to this tendency.

To sum up, the general distribution of Irish halberds is densest in the Central Plain and in those parts which may logically be regarded as extensions of it; but the distribution of the three types which we must regard as earliest in the series gravitates towards the north-east.

Scotland (map, fig. 54; halberds, figs. 55 and 56).

As in the case of Ireland we must consider distribution in other countries in relation to typology.

Scotland is of particular interest in regard to typological considerations of the halberds found there, since it is the only country outside Ireland where halberds of Type 5 occur. There is one possible exception to this in the case of no. 4 in Wales. Everywhere else where halberds showing Irish affinities occur outside of this country the class represented is Type 4. The Scottish examples that are marked as Type 4 in the list are on the whole very near the Irish series in character, though some peculiarities of outline, mid-rib or other feature, make it likely that nos. 4, 5, 7, and 9 were made in Scotland. The blades of Type 5 are particularly Irish in character. These are followed by two blades of Type 6. No. 21 is unusual in being of the bent class but nevertheless not ascribable to Type 5 because very un-Irish in character.

The distribution of the Scottish blades is interesting. A glance at a physical map of Scotland shows that there are two main natural routes across the country—the one from the Firth of Clyde across the Central Lowlands to the Firth of Forth; the other from the Firth of Lorne along the pass which divides the north-west and south-east Highlands (where the Caledonian Canal has been cut) to the Moray Firth. It will be noticed that all the halberds are distributed along these two routes except the hoard of three in Aberdeenshire. We must therefore consider the halberds as marking trans-Scottish routes between Ireland and northern Europe; the importance of these routes will appear all the more clearly when we come to deal with the halberds from Denmark and Sweden. Since the number of localized finds from Scotland is comparatively small, there being only fourteen examples, it is rather risky to draw conclusions from their distribution other than those already indicated,

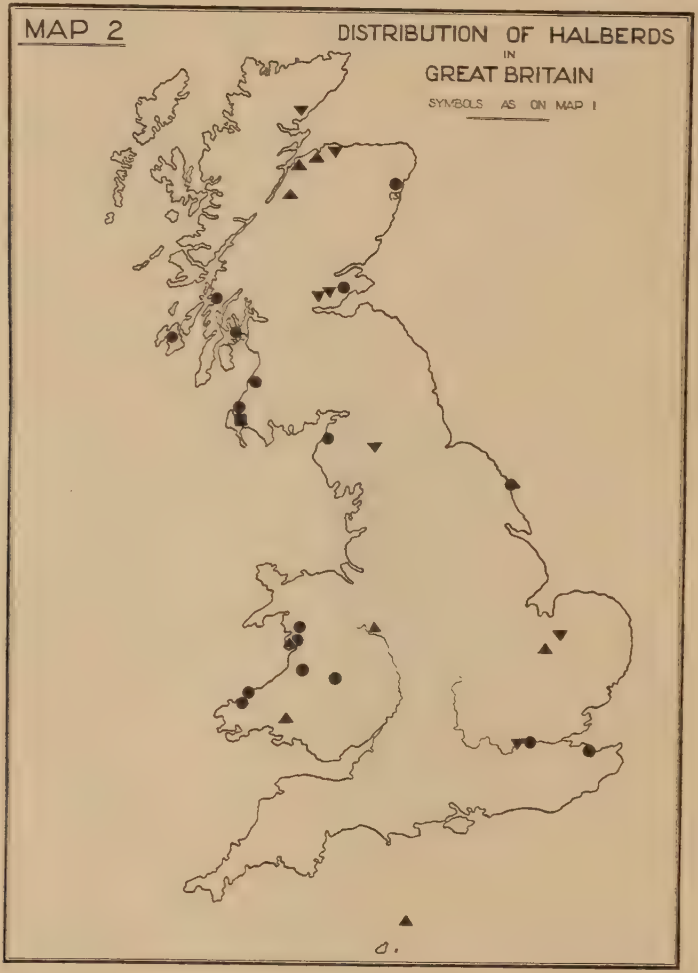


Fig. 54

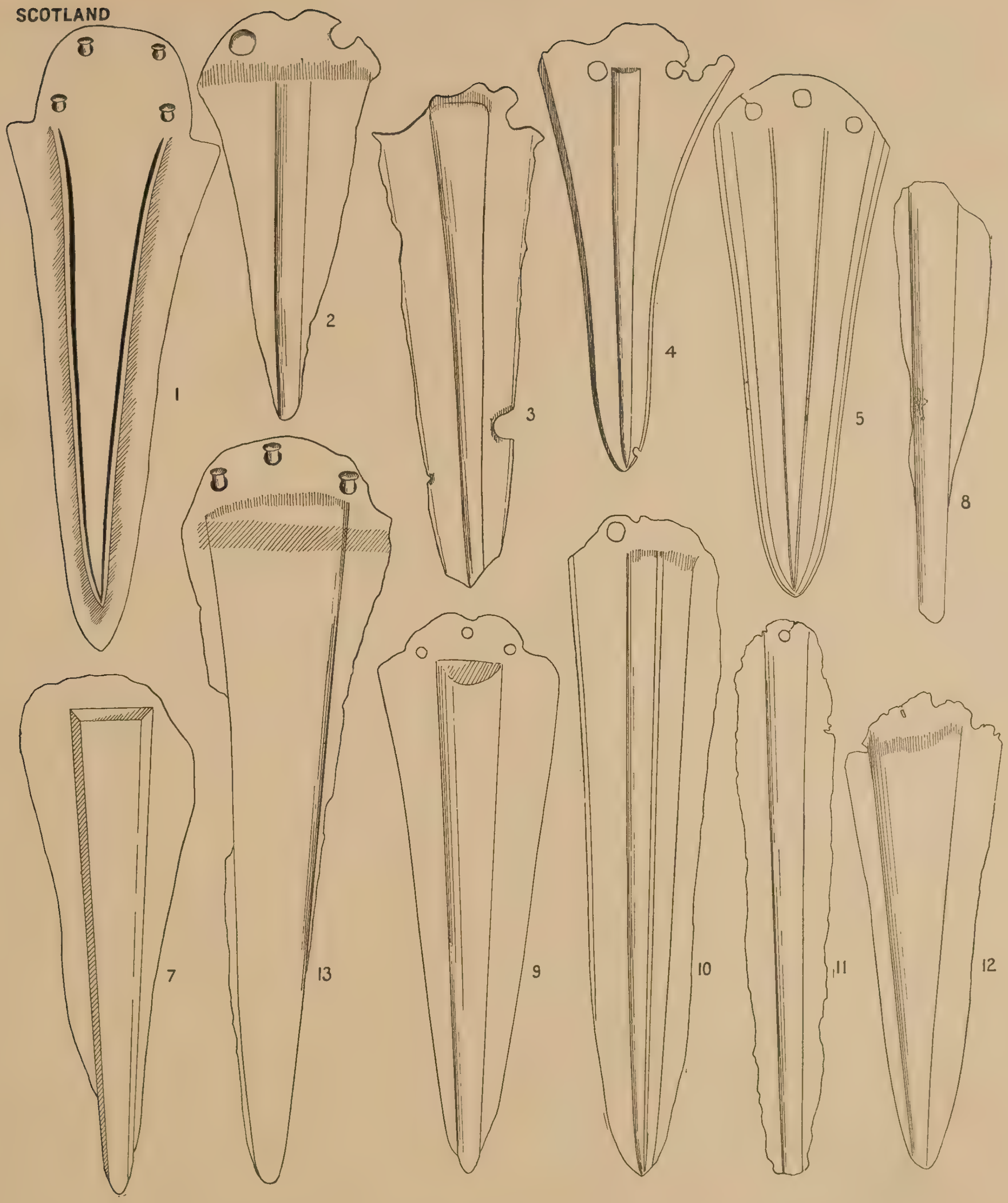

SCOTLAND
1
2
3
4
5
8
7
13
9
10
11
12

Fig. 55. No. 1, combination of Types 1 and 5; all others Type 4 (⅓)

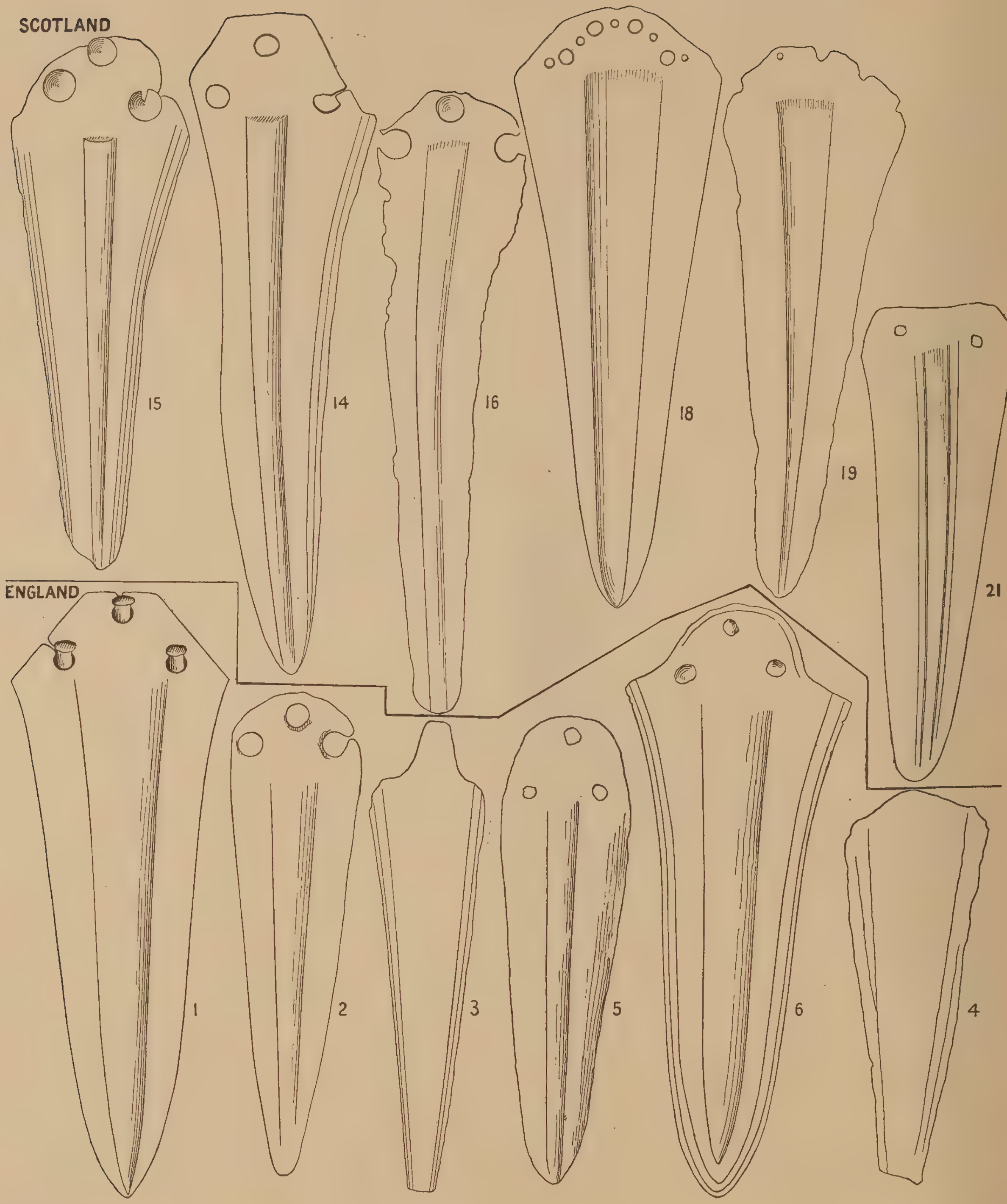

SCOTLAND
15
14
16
18
19
21
ENGLAND
1
2
3
5
6
4

Fig. 56. Scotland: Nos. 14–16, Type 5; nos. 18 and 19, Type 6. England: nos. 1–6, Type 4 ($\frac{1}{3}$)

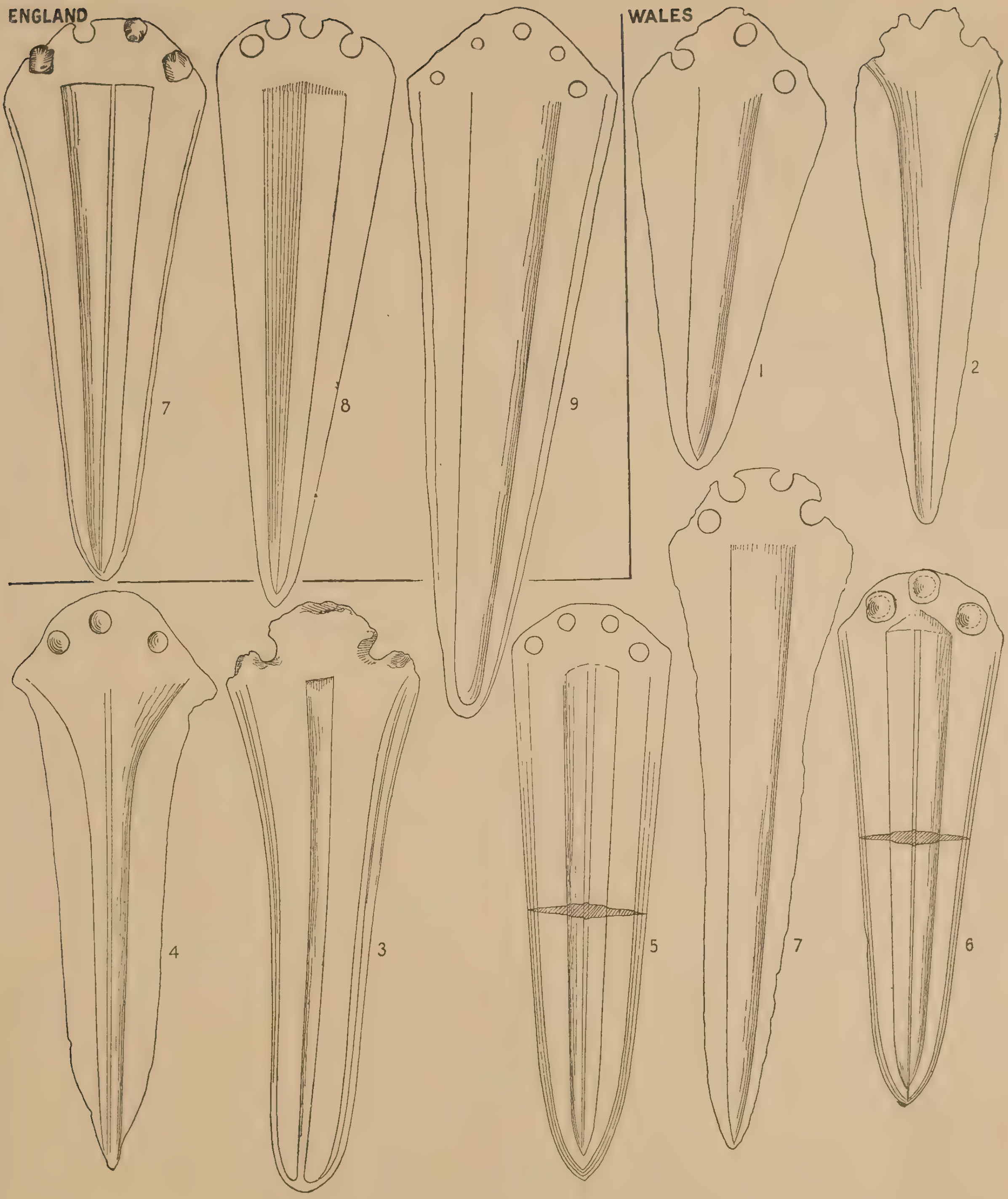

ENGLAND
WALES
7
8
9
1
2
4
3
5
7
6

Fig. 57. England: nos. 7–9, Type 6. Wales: nos. 1–4 and no. 6, Type 4; nos. 5 and 7, Type 6 (⅓)

but one is struck by the general agreement between halberd-distribution and that exhibited by food-vessels as shown by Professor Childe's distribution map.[1] If the food-vessel finds in Scotland indicate points of settlement of Irish colonists they indicate also the stages along the routes followed by further Irish bands journeying towards Northern Europe bearing with them flat axes and halberds. Although we are not given a distribution map of flat axes, Professor Childe's remarks on the subject are not at variance with the views here stated.[2]

England and Wales (map, fig. 54; halberds, figs. 56 and 57).

The halberds found in southern Britain do not show such strong Irish affinities as do those from Scotland. The Welsh examples are closer to the Irish forms than the English because of the number of them which may be classed as Type 4, but in many instances even in Wales these differ from Irish specimens in notable features. One is particularly struck by the out-splaying of the mid-rib towards the base of the weapon in the case of nos. 2 and 4 from Wales—a feature not found in Irish halberds. No. 1 comes nearest to the Irish series. No. 3, to which we have already referred, is the only halberd in southern Britain which approaches Type 5 in the curvature of the blade, but, while the impression given is of a considerable curvature, this is due to the fact that one edge curves much more than the other and the mid-rib really curves very slightly.

In the same way the halberds in England, even when they are ascribed to Type 4 (nos. 2 to 5), differ from the Irish ones in such a way as to make them appear as imitations of Irish imports rather than as the imports themselves. No. 1 is an exception to this and is sufficiently Irish in type to cause one to think of it as an Irish specimen. The difference is sometimes, as in the case of the Welsh ones, an out-splayed mid-rib (no. 3, though the tendency is not as marked as with the Welsh examples); sometimes it is difficult to say where the difference lies (nos. 2 and 5), but it seems to be the difference in the proportions of the blades which distinguishes them. No. 6 from the Thames is similar to one from Inchigeelagh, Co. Cork, but the latter is slightly curved. Both are characterized by the peculiar shape of the hafting-plate, which is broad where it meets the end of the edges and curves inwards and upwards on both sides to meet the semicircular base. The same type occurs again in Portugal (three examples), though the arch-form of the base is less developed.

Scandinavia (maps, figs. 58, 59; halberds, figs. 60, 61, and 62).

The area where halberds are found in the Scandinavian lands is a limited one and it is therefore convenient to deal with these finds as a unit. The map shows them to be almost completely confined to the southern portion of Sweden,

[1] *Prehistory of Scotland,* map II.

[2] *Op. cit.* 97.

with the greatest concentration in the province of Skåne and the eastern coasts of Denmark. The distribution invites comparison with certain other known distributions and this leads to interesting results. The halberd distribution is similar to that of the megalithic graves.[1] The area of the megalithic monuments extends farther to the north, along the southern coast of Norway; otherwise there is no essential difference between the distribution of these

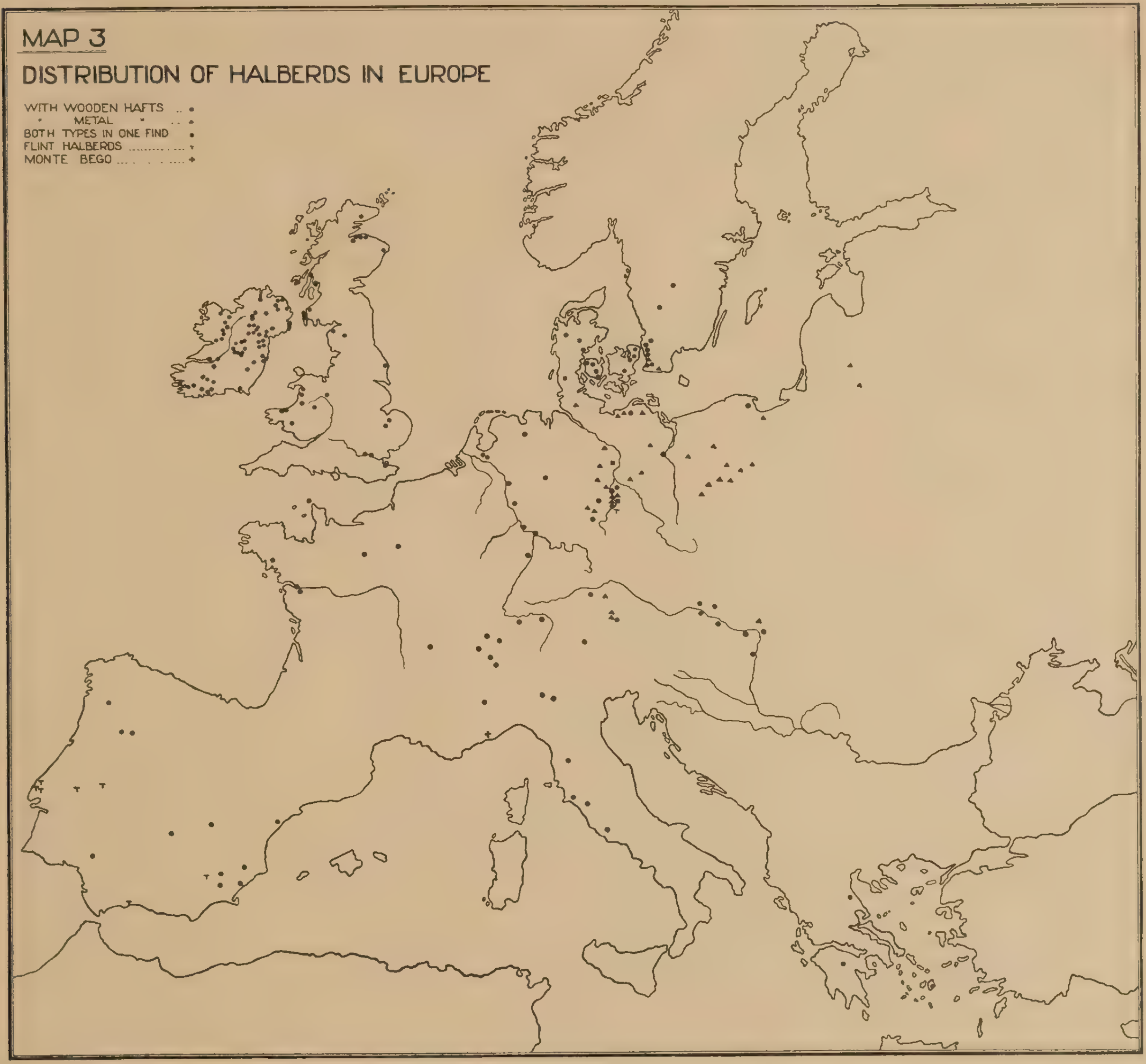

MAP 3
DISTRIBUTION OF HALBERDS IN EUROPE
WITH WOODEN HAFTS .. ●
" METAL " .. ▲
BOTH TYPES IN ONE FIND ■
FLINT HALBERDS .... ▼
MONTE BEGO .... ✦

Fig. 58

---

[1] Childe, *Dawn*, maps III and IV; Fox, *Personality of Britain*, fig. 8.

monuments and that of the halberds. We have still another strikingly parallel distribution in that of flat axes. This is to a remarkable degree similar to the distribution of halberds, and, when we remember how definitely Irish in character as to shape and ornament many of these axes are, we see the significance of their parallel distribution. The reason for the concentration of these types in the same areas is presumably based on soil and other geological considerations.

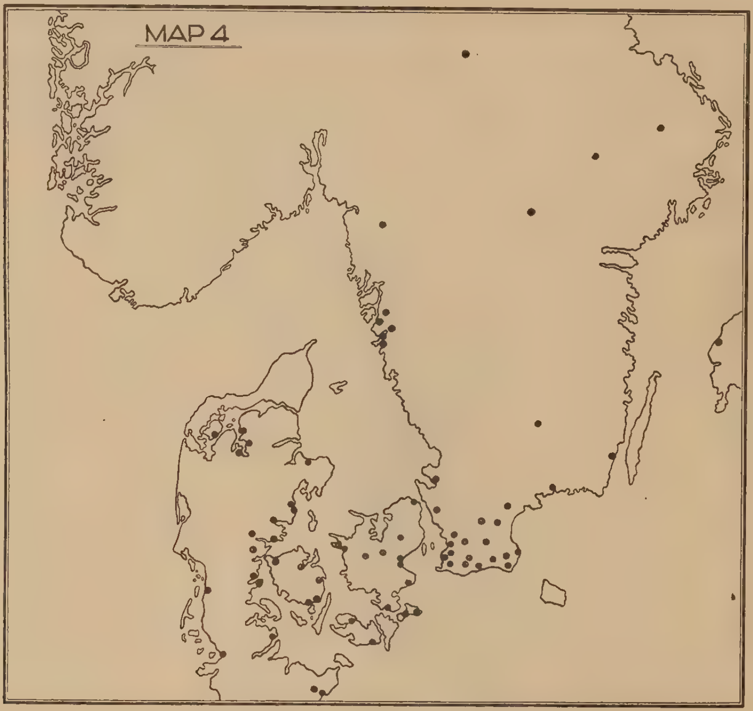


Fig. 59. Distribution of flat axes in Scandinavia

If these archaeological distribution-maps are compared with a map showing density of population in modern times (e.g. *Times Atlas* (1922), pl. 11, Population) it will be found that those areas which show the greatest concentration of archaeological material are also the parts showing the greatest density of present-day population.

We must, in particular, note that the Scandinavian halberds show remarkable Irish affinities. Indeed most of them are so Irish in type that one must regard them as due not to Irish influence but as being actually of Irish manufacture. Of the twenty-six halberds listed from Denmark and Sweden, only two were fitted to metal shafts. The first fifteen examples are the most definitely Irish, the next three slightly less so—in having out-splaying mid-rib or some such feature they to some extent diverge from the more Irish type. Nos. 19 to 23 (inclusive) must be set down as local developments, because they

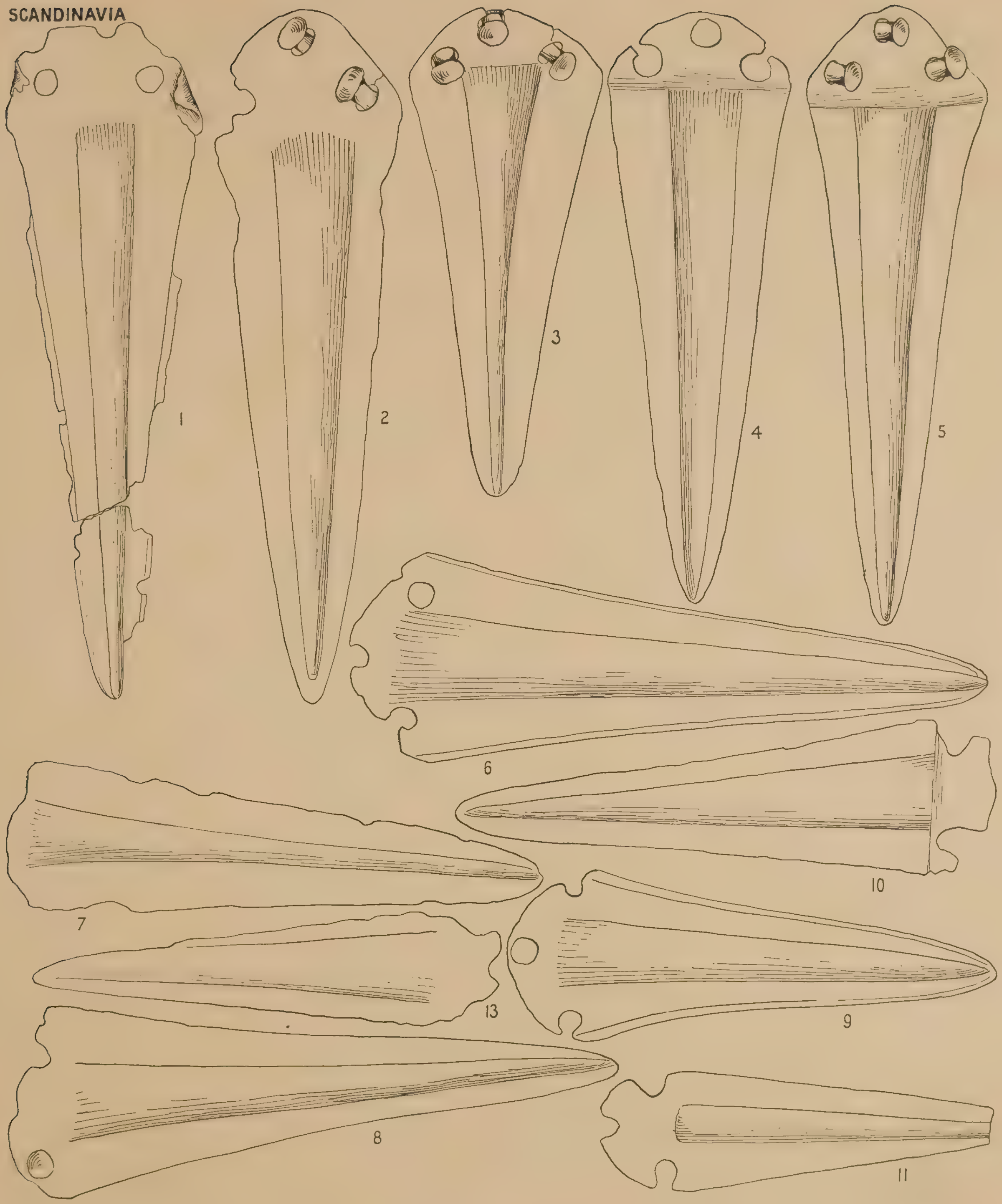

SCANDINAVIA
1
2
3
4
5
6
10
7
13
9
8
11

Fig. 60. All Type 4 ($\frac{1}{3}$)

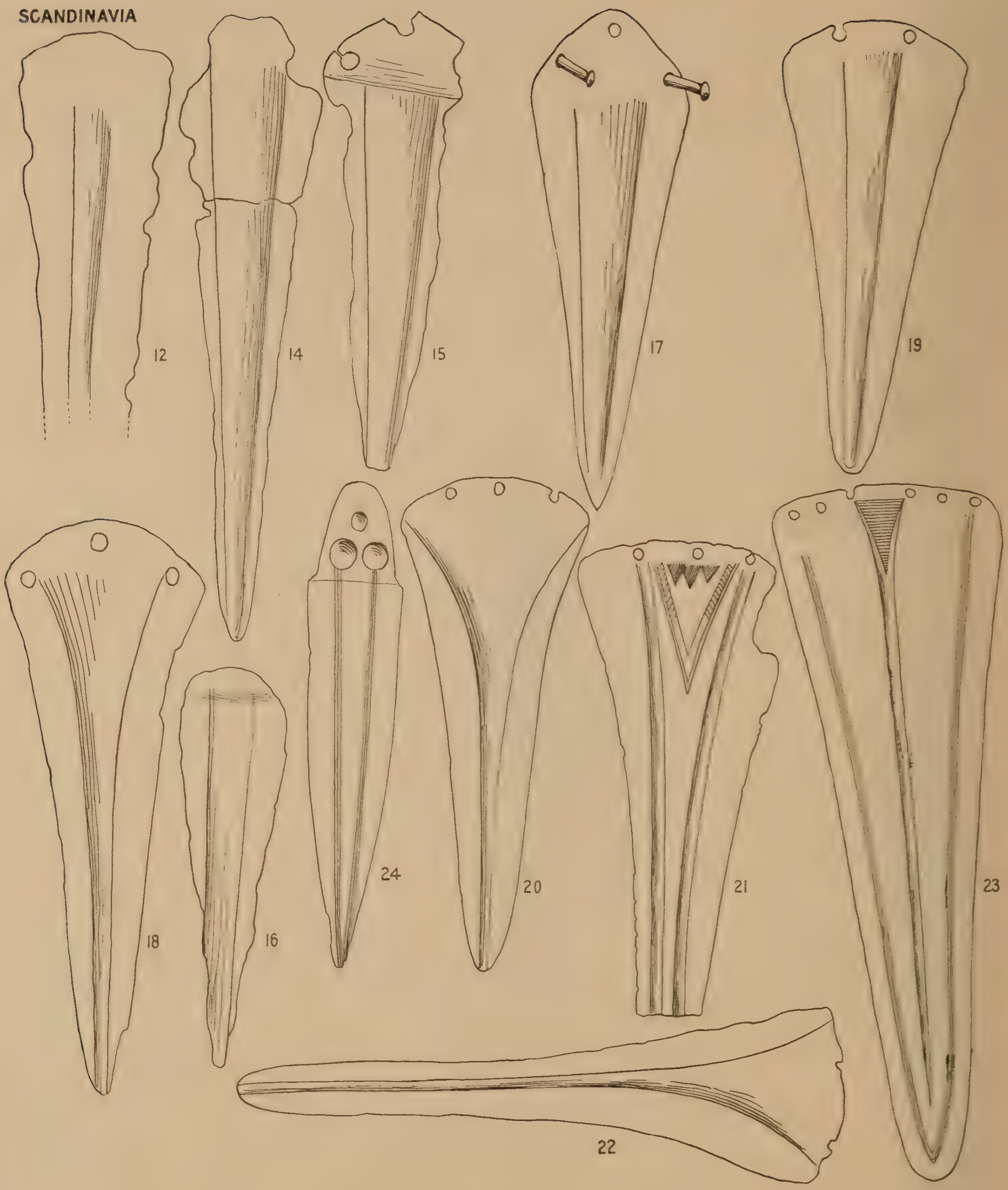

SCANDINAVIA
12
14
15
17
19
18
16
24
20
21
23
22

Fig. 61. Nos. 12–19, Type 4 ($\frac{1}{3}$)

have a different arrangement of rivet-holes or mid-rib, or are ornamented. No. 24 is a strange form which may be regarded either as an unusual Scandinavian late development or as an early local attempt to copy an Irish halberd of Type 3.

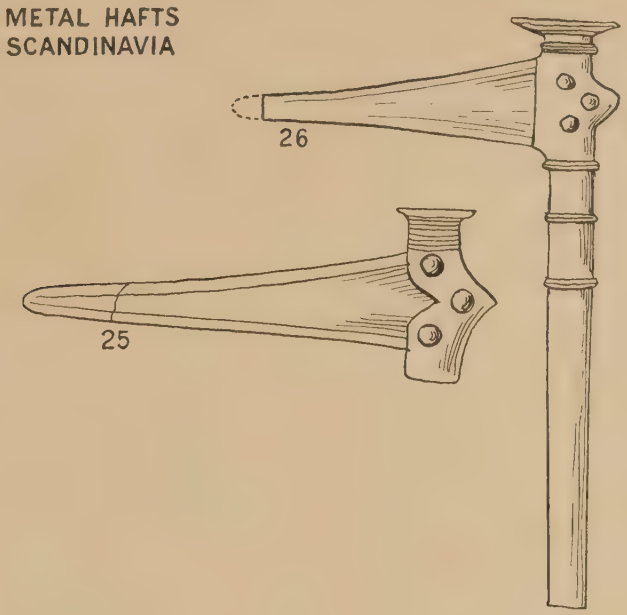


Fig. 62

Germany, etc. (map, fig. 58; halberds, figs. 63, 64, and 65.)

As in the listing of the German examples it is found more convenient to discuss the Posen and Lithuanian halberds with the German ones. One is immediately struck in reviewing the German material after having dealt with the Scandinavian by one obvious difference between them: the Scandinavian stands in close relationship with the Irish material, but the affinities of the German group are much less obvious and the types of halberds represented are far more diverse. In listing the German halberds, beginning with those of which there is at least a likelihood of their having been attached to wooden shafts, an attempt is made to arrange them so as to fall into such a sequence that those nearest to the Irish Type 4 come first. In doing so we find only one (no. 1) which comes satisfactorily near the Irish series. It is significant that this is the farthest west of the north German halberds. While an analysis of the weapon is not available it is, judging by appearances, almost certainly pure copper. Although we consider it the nearest to the Irish series in type, it has certain characteristics—e.g. three niches for rivets instead of complete holes—which suggest its being a local imitation rather than an Irish import. The same is true of the Dieskau example with rivets of Irish character.

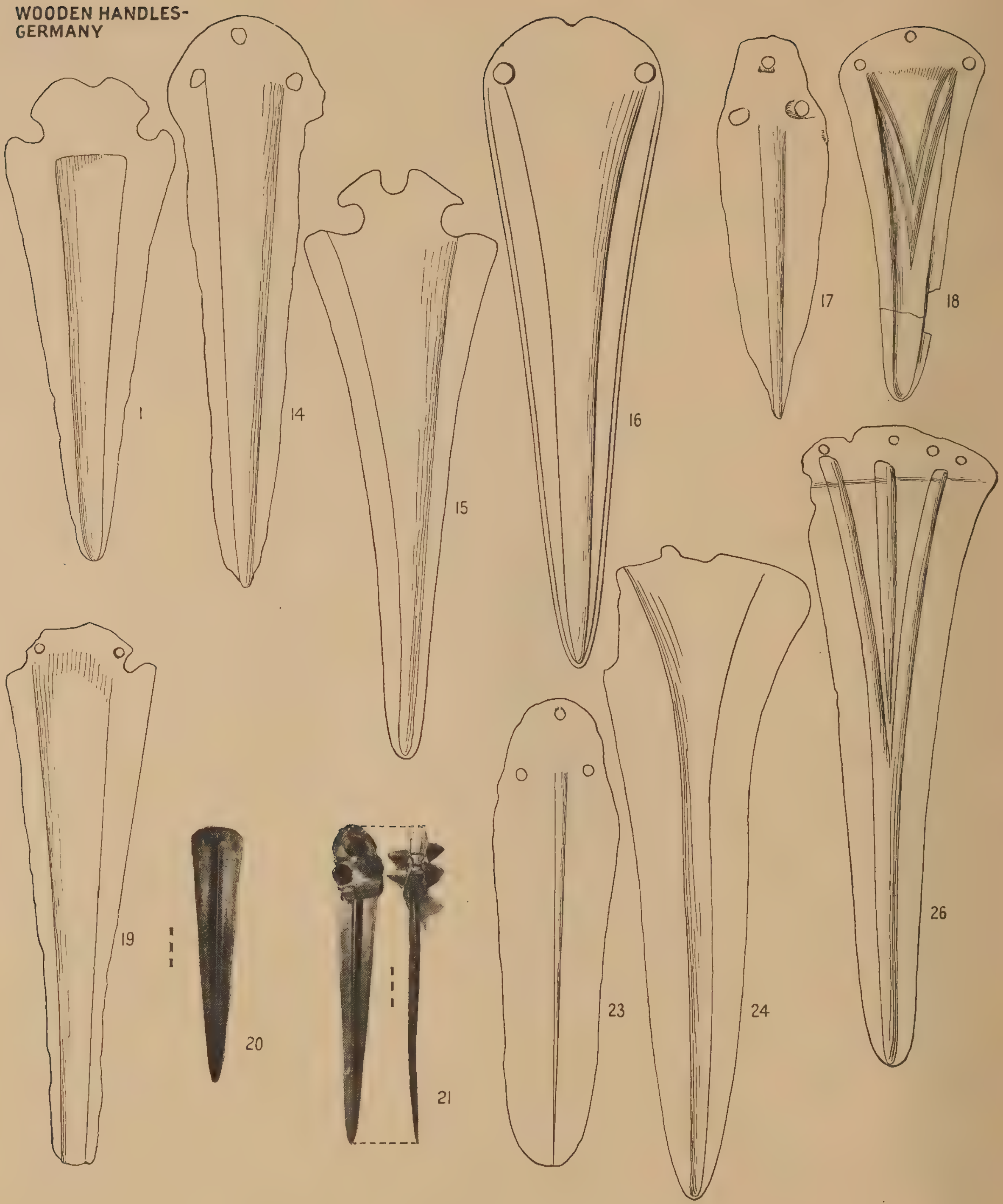

WOODEN HANDLES-
GERMANY
1
14
15
16
17
18
26
19
20
21
23
24

Fig. 63. All except nos. 20 and 21 ($\frac{1}{3}$). (Photos of nos. 20 and 21 by courtesy of Provinzial-Museum, Stettin)

Many of the examples which follow (to no. 18, inclusive) are possessed of some affinity with the Irish material, but of no one specimen would it be justifiable to suggest that it is a direct Irish import.

The German halberds show a great diversity of form and many individual peculiarities. Thus the rivets may vary from the heavy ones suggestive of an Irish halberd on the Dieskau blade to the very light type suggested by the rivet-holes in the blade from Giebichenstein or in that from near Salzburg (no. 19). Again, we have various forms of base and hafting-plate: round with niches for the rivets as in the case of the Ulpsrunge and some of the Dieskau halberds (a type of base which may be associated with metal or wooden shafts); round but with complete rivet-holes, as no. 4 (from the Rhine); narrowing and jutting out towards the base as no. 17 (from Bacharach). Nos. 20 and 21 are unusual in having long, narrow, and very pointed blades. Both have raised

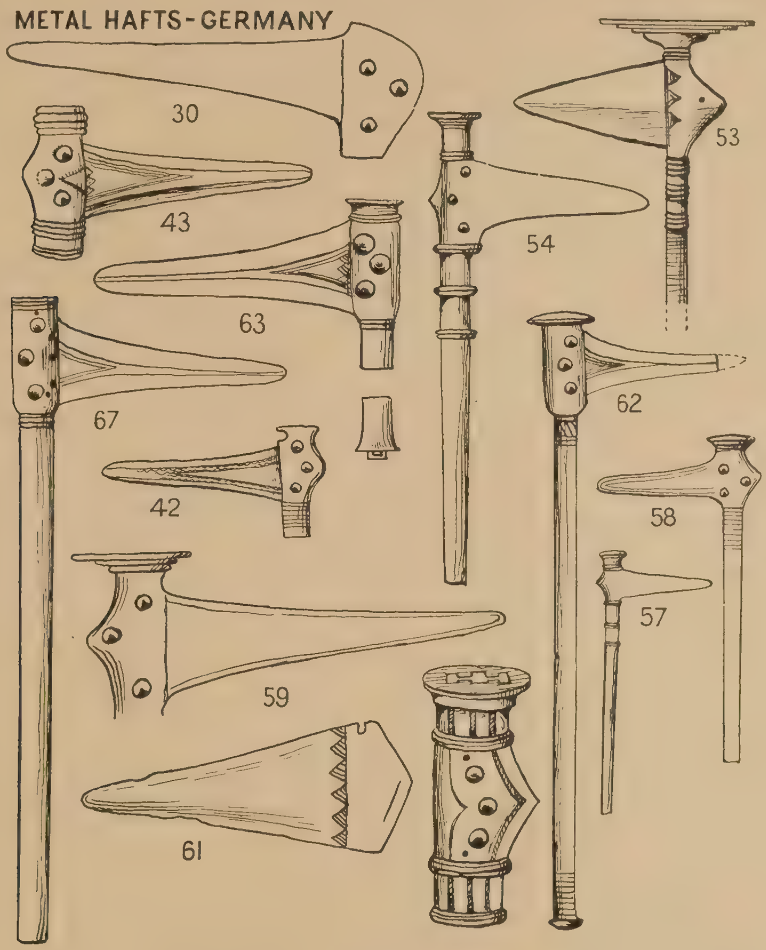


Fig. 64. Various scales

mid-ribs of triangular cross-section and both come from Pomerania. The conical-capped rivets and sheet gold on one of them are noteworthy features. These rivets are, however, in the main, ornamental features, there being one functional rivet which is shorter and much stouter. The general character of these two blades, and particularly the type of mid-rib, connects them with the Hungarian examples, though these are somewhat shorter. The halberd from Apeldorn which Sprockhoff has remarked on as evidence of influence from Great Britain or Ireland in Germany is of an unusual type, and it is by no means likely that it is a direct import. There is certainly no parallel for the triple mid-rib it exhibits in Great Britain and it is still more foreign to the Irish types.

The German halberds with metal shafts follow to a remarkable degree the geographical distribution suggested by Kossinna's divisions. His Type I is centred in the main in the Saale area with extensions to southern Germany. Type II halberds are found in Brandenburg and Mecklenburg, while one from Hungary and two from Sweden are of this class. Type III occurs in Posen and Lithuania.[1]

Other Continental Countries

The two halberds from the Netherlands are rather similar to no. 1 from Germany and stand in the same relationship to the Irish series (fig. 66).

Of the French examples (fig. 65) the first two stand very close to the Irish Type 4, except that no. 1 has more than three rivet-holes. The three examples that follow are different in being shorter and in having more rounded bases and narrow but well-marked mid-ribs. Considerable confusion exists regarding the St. Fiacre halberd or halberds, but these have been discussed when dealing with the associated find. In general it will be noticed that the French halberds come from a belt crossing the country so as to indicate a connexion between the Atlantic sea-board and the halberd-producing areas of Switzerland and Italy.

The Italian specimens (fig. 67) are varied in character. Nos. 1 and 2 have very strong Irish reminiscences while no. 3 might well have been produced in Great Britain—being similar to examples from southern Britain in having a mid-rib which splays outwards at the base. No. 4 has already been referred to because of its similarity to the halberd from Mycenae and the specimen from Ireland. No. 5 is of a different type and has long, slender rivets. It may represent Spanish influence. No. 6, part of a chalcolithic grave-group, is a local type of blade, similar examples to which are fairly common in Italy.[2] As mentioned when discussing this specimen as part of a grave-find certain

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[1] A halberd from Slovakia is mentioned by Childe, *Danube*, 243, but I cannot get confirmation of this as the reference is evidently incorrect.

[2] *Bull. Pal. Ital.* xxix (1903), 158, fig. 7; *ibid.* xxxvii (1912), 127.

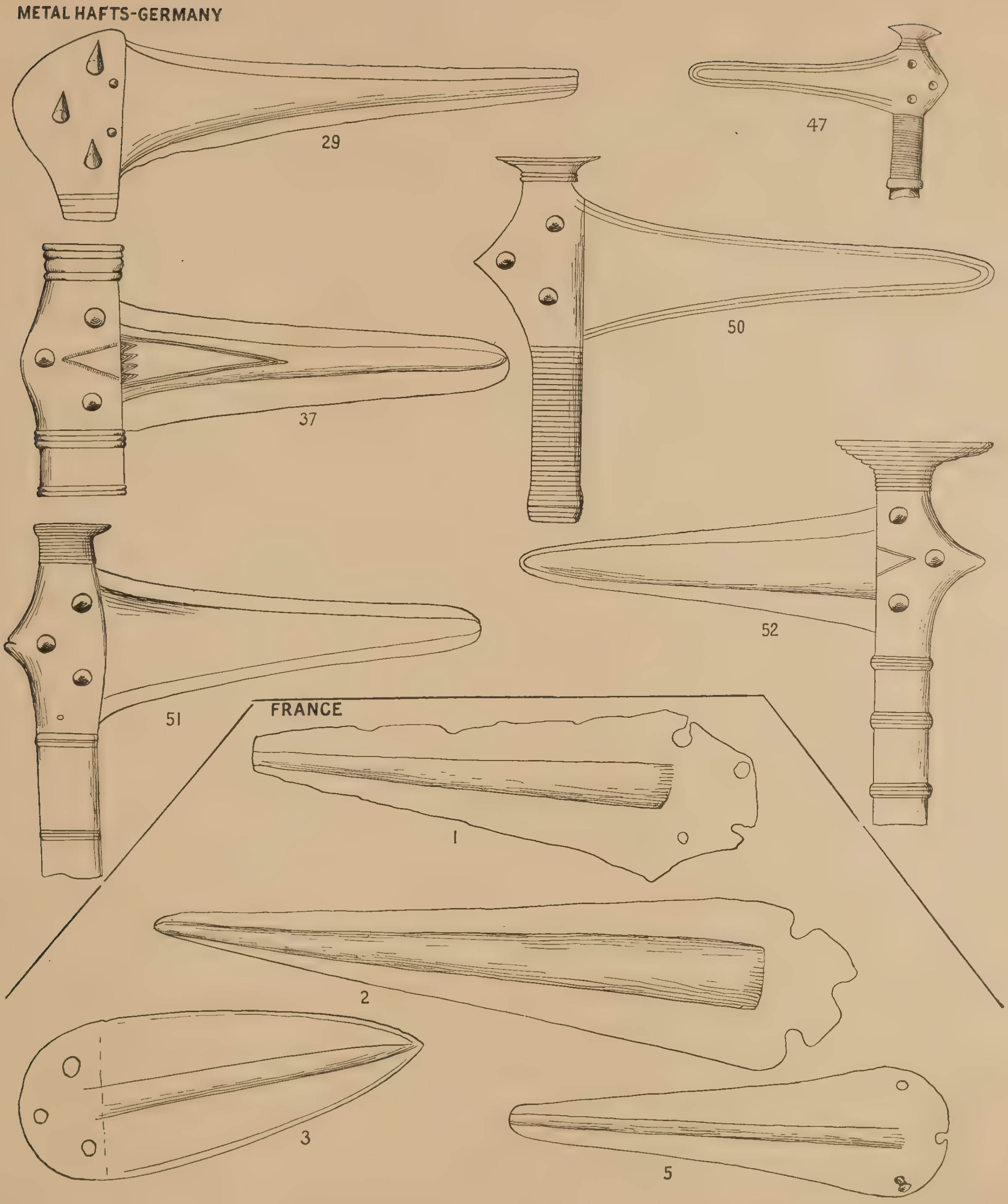
METAL HAFTS-GERMANY
29
47
50
37
52
51
FRANCE
1
2
3
5

Fig. 65. (⅓)

features suggest its having been a halberd. The same is true of the other similar blades, but we must, however, regard them as a non-specialized development not to be definitely distinguished from daggers. The same is true of the other type of blade which Åberg thinks must be regarded as halberds.[1] These make their appearance at Remedello and in other sites in northern and central Italy.[2] They are triangular blades with tangs having one or, less frequently, two rivet-holes; and while they may be justly regarded as tanged daggers, the breadth of base of some suggests their having been hafted as halberds. We may see in such blades an expression of the halberd idea, but nevertheless it seems likely that the later Italian halberds owe more to the Irish type than to the local non-specialized earlier blades. The triangular, raised mid-rib on the tanged variety, however, may find its survival in the central European halberds, having the same type of mid-rib though differing from the Italian ones in respect of form of blade.

The first of the Swiss halberds (fig. 66) resembles the Irish series. No. 2 is very similar to the Pomeranian one from the Oder (Germany, no. 20) in having slender rivets with conical caps. It has also the remains of a bronze sheeting similar to the gold sheet of the Pomeranian halberd. The other Swiss halberds are of various forms, mostly, however, characterized by small rivet-holes.

There are five halberds from Austria (fig. 66) of which no. 1 has not previously been published. This halberd has an outline very similar to that of the weapon from Bacharach (Germany, No. 17). Nos. 2 and 3 resemble the Irish halberds, but no. 3—the largest known halberd—had five rivets. No. 4, which is part of a grave-group, is in outline similar to the Hungarian examples though it differs in other characteristics (e.g. type of mid-rib). No. 5 is remarkably similar to nos. 20 and 21 from Pomerania in shape of blade and type of mid-rib. It further resembles the former in having the same kind of ornament and the latter in having conical-capped rivets. It is, therefore, also very close to the Swiss specimen no. 2.

There are three possible examples of halberds from Greece. The one from Mycenae has already been referred to several times. The blade from Amorgos (fig. 67) is so small that it is at least very doubtful if one is justified in regarding it as anything but a dagger. The weapon from Sesklo has a straight upper-edge as have those from Hungary.

The five Hungarian examples (fig. 67) of halberds which were attached to wooden shafts form a remarkably uniform group. No. 1 differs from the others

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[1] *Bronzezeitliche und früheisenzeitliche Chronologie*, part III, 8.

[2] Åberg, *loc. cit.*, figs. 174, 175; Montelius, *La Civ. Prim.*, pl. 36, nos. 9, 11, 25; pl. 128, no. 11; pl. 129, nos. 16, 22.

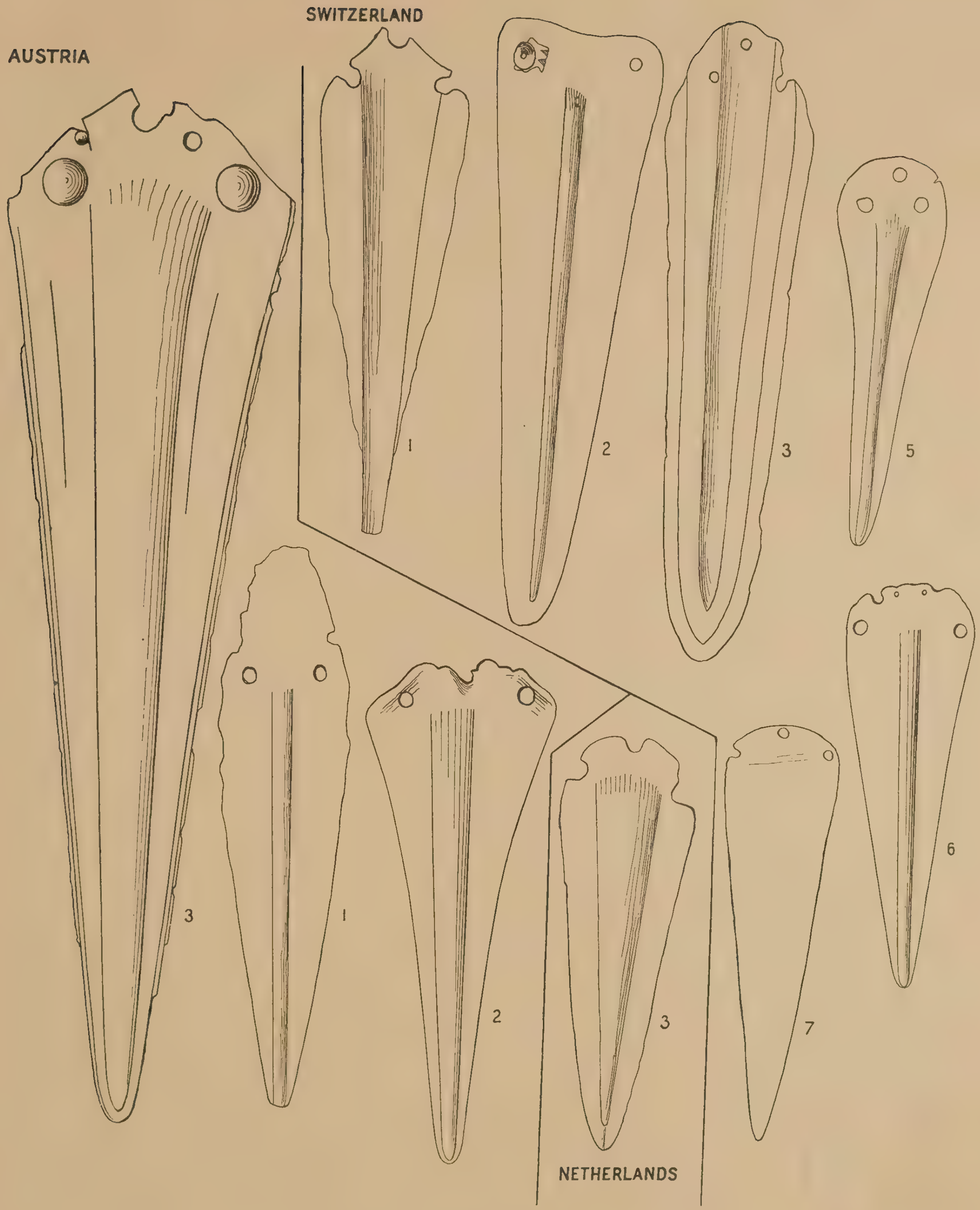
AUSTRIA
SWITZERLAND
1
2
3
5
3
1
2
3
7
6
NETHERLANDS

Fig. 66. ($\frac{1}{3}$)

in not having a developed mid-rib, but all five have an outline of such form that the upper edge makes a right angle with the line of the shaft. As already remarked there are certain notable resemblances between these blades and others from Pomerania, Switzerland, Austria, and Greece. The Hungarian halberds appear as the centralization of an eastern European tendency of specialization in the matter of the shape of the halberd-blade.

The Spanish halberds (fig. 68) known to me are almost all from the Siret excavations on sites of the Almeria Culture (El Argar period). These blades may be divided into two main classes: those which have wide bases—almost straight or only slightly curved, and those which have round bases and forms which can only be declared to be halberds and not daggers by the evidence of the remains of the transverse hafting. Outside this group one from Ciudad Real is of the broad-based type, and that from Alicante seems from Schmidt's description to be of the same kind. The halberd from Ronfeiro (*mit breit dreieckiger Basis*) seems to have more of the Northern or Western European character. Another from Cuenca is an unusual type with a loop form of socket. Though I have included this example I have no evidence of its date. There is another, more elaborate because it has a perforated blade, in the St. Albans Museum, from the Ball Collection. Beyond the information that it comes from Spain there is no closer localization. I have not seen this class of halberd figured or discussed anywhere. No. 21 I know only from Márton's note. The halberds nos. 14 and 21 have silver rivets. While it may be supposed that the broad-based type, since it is a more specialized form, is slightly later than the dagger-like variety, there does not seem to be anything in the available evidence to substantiate this. There is one other halberd (no. 6) from El Argar, Grave 575, which does not fit into either of the two classes suggested. It is really a short sword adapted for use as a halberd by the alteration of the hafting. It would, therefore, seem that, within the limits of the information available, the Spanish halberds form a fairly homogeneous group with its centre of concentration in the south-east of the country.

I know of only three blades from Portugal (fig. 68) which can with certainty be classed as halberds. All three come from the province of Tras-os-Montes. They are very similar in type and quite different from any of the Spanish halberds known to me. The base of each of the Portuguese halberds has a peculiar shape—an arch and an outward curving to meet the ends of the edges. A most remarkable detail is that in each case the one side of the base is slightly longer than the other. All three (two of them are from the same locality and may have been found together) are so similar that they might have been made by the same craftsman. Their similarity to other examples has already been remarked on. They resemble in lessening degrees those from: (1) the Thames at Westminster,

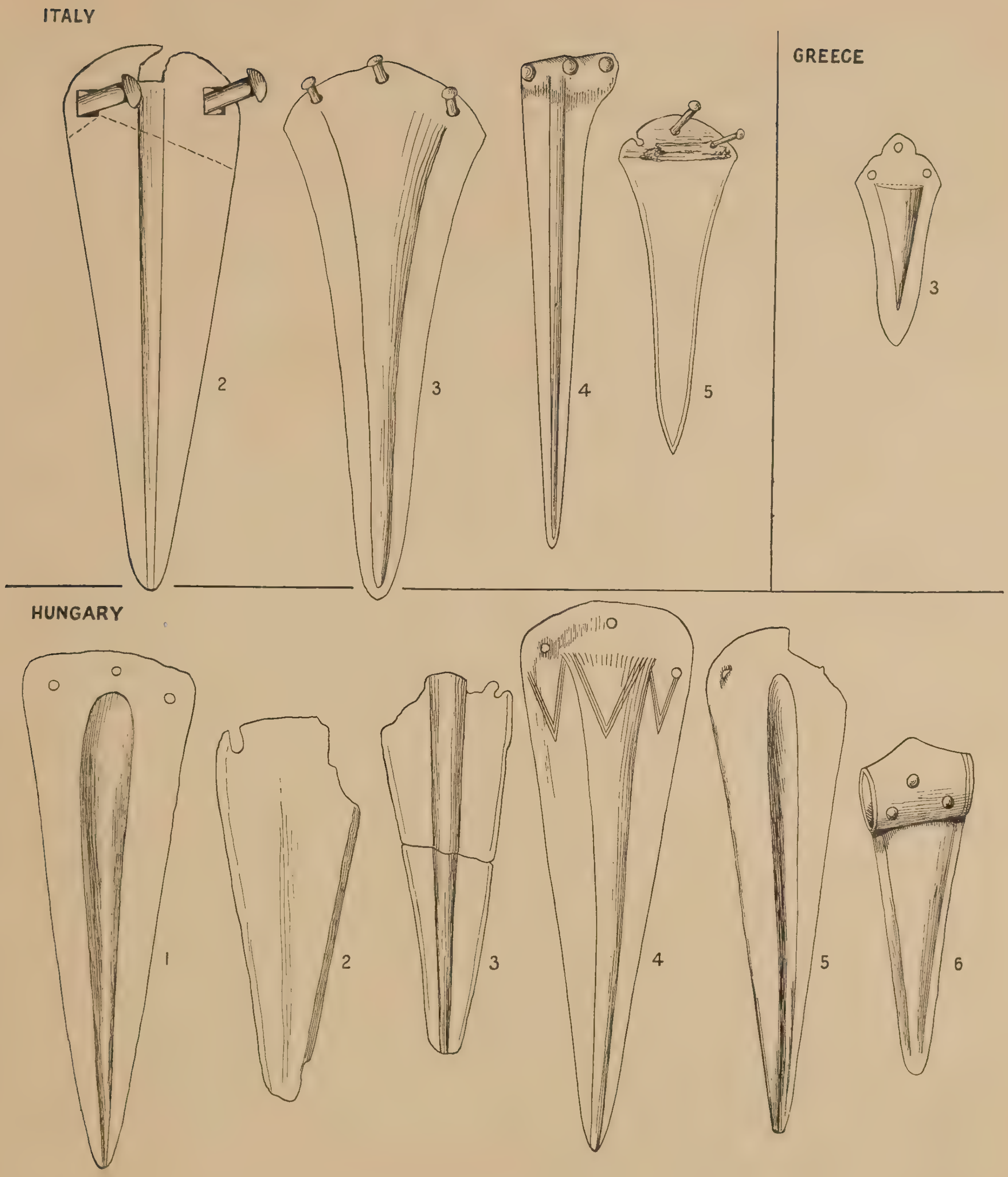
ITALY
2
3
4
5
GREECE
3
HUNGARY
1
2
3
4
5
6

Fig. 67. ($\frac{1}{3}$)

(2) Inchigeelagh, Co. Cork, (3) Alderney, Corblets, Channel Is. Their uniformity of type suggests their being of local Portuguese manufacture, but their similarity to Irish and British examples and their dissimilarity to the other blades from the Iberian Peninsula makes it clear that they are to be regarded as evidences of influences from these islands in northern Portugal.

Other possible halberds from the Iberian Peninsula mentioned in archaeological literature must here be discussed, but because it is not at all certain that the blades are really to be regarded as halberds I have omitted them from my lists. Much has been written to suggest that the halberd of metal was derived in the Iberian Peninsula from a flint prototype. It is therefore necessary that we seek for such early metal halberds as seem to mark this transition. A group of five blades with notched bases comes from Monument III (Beehive Tomb) at Alcalar, Algarve.[1] They vary in length from 20·5 cm. to 11·7 cm. approximately. There is very little to point with any certainty to their having been hafted as halberds, and they are mentioned here merely because they are the only weapons of the Algarve Culture (which in the present state of knowledge is usually regarded as the forerunner of the Almería Culture) which can possibly be regarded as halberds. In the Museu Etnológico at Belém is a further group of ten blades found together. They are long, narrow, and pointed, and each has at the base two rivet-holes or notches for rivets. Again one might suggest their having been hafted as halberds, but the weight of probability seems to be against this. The find comes from Extremoz, Prov. Alentejo.

Åberg[2] gives a list of halberds seen by him in museums in Spain and Portugal. He does not give illustrations. Of those mentioned by Åberg I include the ones from Alicante, the Guadalcanal, and from Alto de Pereiras, because I have either found them mentioned elsewhere or have seen the actual weapon. Of one other from Åberg's list there is, if the identification be correct, an illustration available. It comes from Serro do Castello and is figured by Cartailhac.[3] It is a pointed blade with a raised mid-rib and a broad tang in which are two rivet-holes. The length of the tang and the downward-curved mark of the hilt as shown in the drawing suggest the probability that this weapon was hafted as a dagger and not as a halberd. The other halberd-producing sites mentioned by Åberg are (5) San Anton, (2) Callosa, near Orihuela, (1) Monteagudo, Prov. Murcia, and (1) Linares, Prov. Jaen. Because the Serro do Castello example is of such a doubtful character it and those other sites are not shown on the distribution map.

There but remains in discussing the distribution of halberds to mention the occurrence of analogous weapons in Russia, Siberia, and China. The Russian

[1] Figured by Åberg, *La Civ. Énéol.*, fig. 141. He only calls them 'blades'.

[2] *Op. cit.* 164.

[3] *Âges préhistoriques de l'Espagne et du Portugal*, fig. 286.

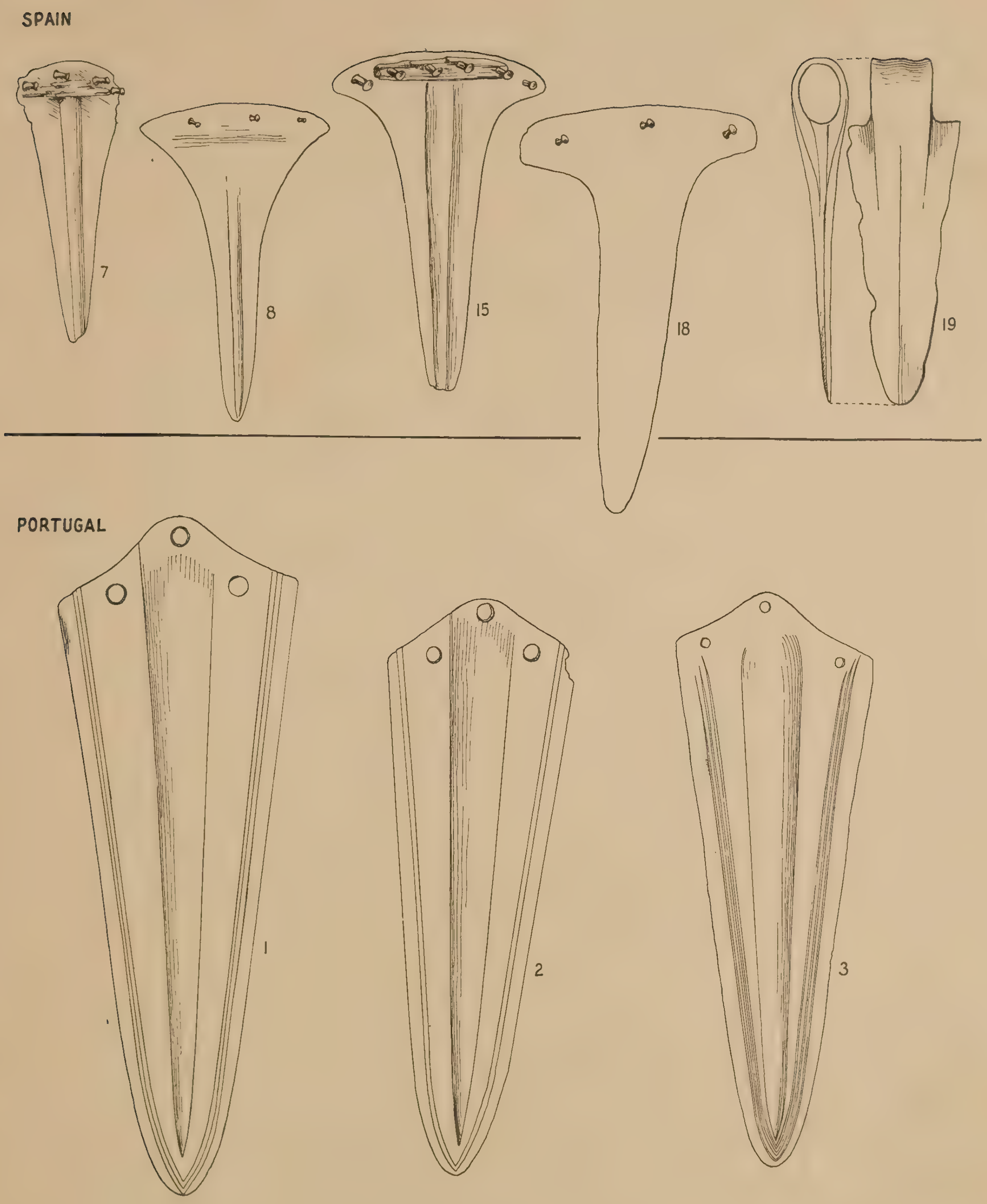
SPAIN
7
8
15
18
19
PORTUGAL
1
2
3

Fig. 68. $(\frac{1}{3})$

examples frequently exhibit animal-head ornaments (fig. 40, 15). Some of these weapons are narrow—i.e. pick-like—in form,[1] but others are sufficiently broad to be regarded as halberds. Those in the Ural and Siberia are similar to the Russian ones. They are dealt with by Tallgren,[2] who points to the absence of swords in the area from which they come. One of the weapons described by him has a socket of bronze and a blade of iron, and the series in general dates to the end of the bronze and beginning of the iron-using period. Tallgren mentions the similarity of some of the animal ornaments with that on axes from Hallstatt.

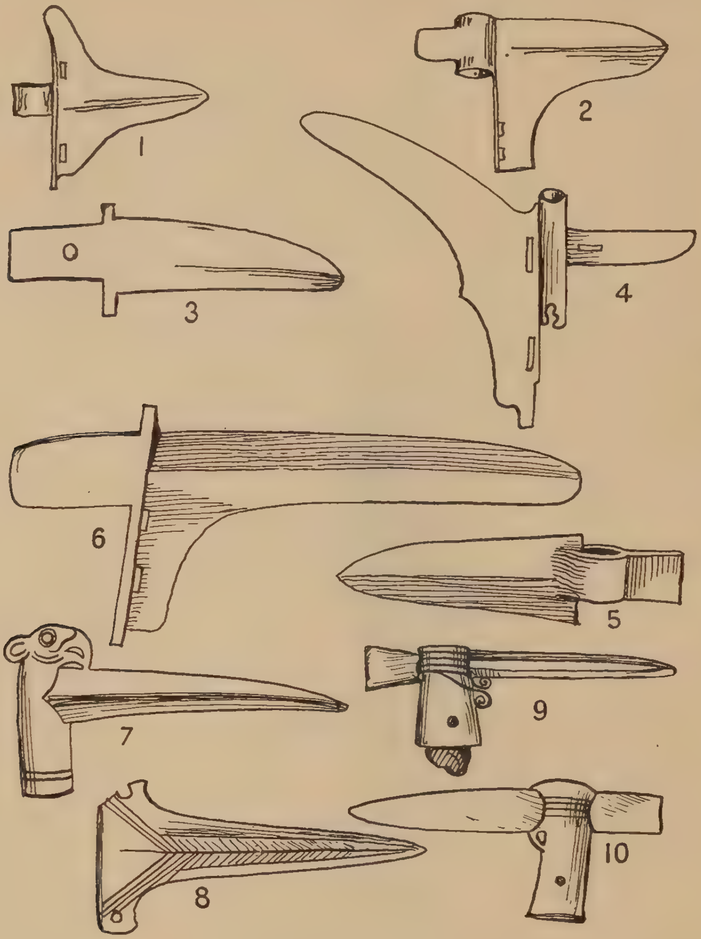

Fig. 69. Chinese Halberds

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[1] One such pick-like implement, having an axe-blade at the other side of the socket, is figured by Rostovtzeff, *Iranians and Greeks in South Russia*, pl. v, 1, and comes from a seventh-century B.C. grave. Another such is figured in Ebert, i, pl. 36, and comes from Anan'ino (article by Tallgren). It is dated in the middle of the first millennium B.C.

[2] *Finsk Museum*, xxii (1915), 96.

One piece, of bone, of a different form is figured, and the observation is made that it is very similar to the halberds (of broad-based type) from El Oficio. This bone halberd is compared to the widely distributed Siberian ski-staff which bears a similar attachment also usually of bone. While one must agree that the bone blade is similar to some of the Almerian halberds, the similarity cannot without further evidence be taken as implying so far-fetched a connexion.

The Chinese halberds may be plain or ornamented (fig. 69). Some bear inscriptions. They are regarded as belonging in the main to the Han Dynasty (206 B.C.—A.D. 220), but some are earlier. Non-metallic halberds also existed in China, as is shown by one in buff-jade from the pre-Han period, and dating probably before 1000 B.C.[1] (fig. 40, 13). Most Chinese bronze halberds show—some to a considerable degree—the upward-sloping tendency already noticed in many, indeed in the majority, of the European halberd-blades. The question of the relationship of the western and central European halberds with those of Russia or China has never been dealt with,[2] and I am not competent to do so. It must suffice to point to the possibility of such connexions having existed. We have further evidence of connexions between western Europe and Russia in the distribution of bronze spear-heads with lunate openings in the blade.[3]

The dating of the eastern examples to a later period than that to which the European examples are ascribed seems to indicate their being due to western influence, though the possibility of their being of independent origin must not be lost sight of, nor must the possibility of their representing Near East influence. We know that halberd-like weapons existed in Babylonia, and that a pick-like implement related in form to the Russian ones was found at Troy.[4] The ornamental features and good workmanship of these eastern halberds, as well as the evidence of the jade example, show, as in the case of so many of the European ones, that they also are ceremonial weapons and symbols of leadership.

CONCLUSIONS

Before proceeding to the final part of our task—a consideration of the general conclusions which may justifiably be drawn from the facts presented in the foregoing pages—we must briefly survey the views put forward by other writers. In particular we must consider the question of where the halberd originated and along what routes it can be traced as evidence of cultural connexions between Bronze Age communities. The general chronological implications are also of great importance.

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[1] L. Ashton and B. Gray, *Chinese Art*, pl. 3a.

[2] Márton published one Chinese halberd, but did not go into the problem.

[3] A. M. Tallgren, 'Die bronzenen Speerspitzen Ostrusslands mit zwei Ausschnitten im Blatt', in *Opuscula . . . Montelio*, 115.

[4] Articles by Prinz ('Der Dolchstab im Alten Babylonien') and Schmidt ('Zum altbabylonischen Dolchstab') in *P.Z.* iv (1912).

Coffey contented himself with drawing attention to certain facts regarding the Irish halberds and was chiefly concerned with proving the existence of a copper-using culture in Ireland. For the relationship of the Irish halberd with the European examples he mentioned the similarity of the Irish halberds to those from Stendal, and figured the Spanish ones, on which portions of the wooden shaft remain, as showing the method of mounting halberds; and for the same reason he reproduced the rock-carvings from the Maritime Alps. The Cremona blade he considered to show relationships between Italy and the Elbe valley via the Brenner Pass rather than influence from Ireland. His conclusions were evidently coloured by the opinion which he expresses (p. 105) that the Irish type is distinct from the continental 'both by the length to which the blades attain and the curve which occurs in many of them'.

Continental writers have been more explicit in their statements regarding the role of the halberd as an indicator of early connexions. In arriving at an estimate of present-day opinion on this point we are fortunate in being given a summary of previous writings by Dr. Beringer in his recent article on Austrian halberds,[1] and if we cannot agree with the author in his conclusions regarding his main problem—the origin of the central European halberd, which he recognizes as not being a native development—we must gratefully acknowledge the fact that his discussion provides proof of the diversity of views which obtain among even the most recent authorities. He does the further service of providing additional evidence as to the chronological place of the halberd.

Montelius[2] saw in the halberds evidence of influence from the east which he brings to northern Europe by two routes: (1) along the Mediterranean to Spain and France and so to the British Isles; (2) along the Balkan Peninsula and the Adriatic Sea to the Danubian lands. In mentioning finds of halberds in the various countries in question he neglects the typology of the halberd and the question of what regions have the greatest concentration of these weapons.

Schmidt[3] seeks the origin of the Northern European halberds as well as the inspiration for the Italian rock-carvings in southern Europe and finds it in the halberds of the El Argar Culture. He sees as bringers of these weapons and of the metal culture to northern, western, and central Europe the Bell-beaker Folk, whose centre of origin he also places in Spain. Behrens[4] voices the same theory.

Åberg[5] believes, however, that in central Europe the halberd is later than the

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[1] *P.Z.* xxv (1934), 130–44. See especially 138 ff.

[2] *Die Chron.* 100.

[3] *P.Z.* i (1909), 113.

[4] *Bronzezeit Süddeutschlands*, 86.

[5] *Bronzezeitliche und früheisenzeitliche Chronologie*, part III, 86.

Beaker Culture. He holds this culture to be contemporary with the Vor-aunjetitz and thinks the halberd to have arrived later from Italy when the true Aunjetitz had already developed. But in *La Civilisation Énéolithique dans la Péninsule Ibérique*, p. 170, he brings the halberds from Spain to these islands, points to the rarity of the halberds in Italy—though this he balances against the occurrence of the rock-carvings in the Ligurian Alps, and says that there is an important centre of halberds in central Europe which he believes due to Irish-English influence rather than to Italian.

Márton[1] proposed a similar theory. While he notes the existence of the Irish halberds and the harmony of the various forms, he decides against the idea of the German and Danubian halberds being derived from the Spanish ones through the Irish specimens, on the ground of the indirectness of the route. He sees three possible sources: a route from the lower Rhine to the mouth of the Danube, a route from the Elbe and Saale southwards, and also influences from Italy. In support of the last, which he seems to favour, he remarks on the other Italian types of the earliest metal period which are found in Hungary.

Gaerte[2] is perhaps most definite as to the relationship of the various groups. He holds the Almeria examples to be the oldest, and from the Iberian Peninsula he sees their distribution to be towards France and Great Britain and Ireland, from which islands in turn the halberd made its appearance on the continent (though perhaps earlier, presumably more directly, in Liguria) and there further developed by being attached to metal hafts.

Much[3] also, at an earlier date, suggested a similar theory, seeing in the Irish halberds intermediaries between those in Spain and those in northern Europe and regarding the Spanish as earlier on typological grounds: (*a*) simplicity of design of some of the Spanish examples as compared with the Irish; (*b*) uniformity of type of the Spanish examples.

Bremer[4] holds that all the Irish examples must be placed in Period I of Montelius's chronological scheme, but that the El Argar examples give one the impression of being slightly earlier.

Evans[5] also sees the first appearance of the halberd in the Almerian Culture, and finds that 'in its secondary shape, with a rib or accentuated thickening of the blade, it is equally at home in Ireland and North Britain'. From thence he traces it to Scandinavia and North Germany. He also follows it to Italy and Sicily (a reference is not given for this and I cannot, therefore, give further evidence for a Siculian halberd), and to the Aegean. In the Italian halberds he sees closer Irish than Iberic affinities.[6]

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[1] *P.Z.* xxii (1931), 18.

[2] *Real.* i, 298.

[3] *Die Kupferzeit*, 131.

[4] In Ebert, i, 298.

[5] *Palace of Minos*, ii, 170.

[6] Subsequent to the writing of these notes there has been published *Der ostskandinavische*

From this review one is quickly of the opinion that none of the authors mentioned, with the exception of Coffey, had the Irish material as a whole before him, and Coffey on the other hand was handicapped by an incomplete acquaintance with the continental material. This is easily understood when we remember that what is definitely one of the most important groups of all—the Scandinavian—with its striking implications for cultural connexions has, with the exception of the two bronze-hafted halberds, been almost entirely neglected in archaeological literature.[1] Further, most of these writers have fallen into the mistake of regarding the part as typical of the whole in the Irish material; that is, our Type 5 because it differentiated itself from the straight-bladed continental examples was regarded as the characteristic Irish type, and the fact that it is only one of the typological divisions of the Irish halberds was ignored. For these reasons we are heartened to put forward a theory which seems more in keeping with the facts, even though it varies from that suggested by the eminent authorities already quoted.

In the first place we fail to see substantial ground for the opinion that the Irish halberd is derived from the Almerian material. The sequence of Irish types presented here is to be taken, not only as a convenient typological division of the material, but also as representing the development of the weapon chronologically. Type 1 is, on several grounds, to be regarded as the earliest with which we deal. Its technique suggests this; it is the same technique as the earliest of the copper axes—the work of craftsmen able to cast the weapons but dependent on a considerable amount of hammering for the finishing of the surface of the products of their casting. The form is undoubtedly early—there is no mid-rib and the outline also suggests (in the fact that the hafting-plate does not noticeably divide off from the blade of the halberd) that it is at the beginning of the series.

Now we have seen that these halberds of Type 1, as well as those of Type 2, tended to concentrate towards the north-east of the country. We have seen further that flint implements of halberd type are also found in the same region, which is the only region producing flint naturally in any quantity. Since we find no metal weapon elsewhere which could serve as a prototype for a weapon such as this—the idea of the Almerian halberds filling this role is on every

Norden während der ältesten Metallzeit Europas (Lund 1936), by J. E. Forssander, who (p. 97) handles the problem more comprehensively than most other writers, and, while he continues to accept the Iberian origin of the halberd, gives full weight to Anglo-Irish influence in the development of the North-European group of halberds and in general in the growth of early metal cultures of northern Germany and Scandinavia.

[1] Montelius, in his article on 'Der Handel in der Vorzeit', *P.Z.* ii (1910), uses lunulae, but not halberds, as evidence of trade between Ireland and Scandinavia. Åberg (*Civ. Énéol.* 170, footnote 2) mentions the fact that halberds are distributed over Denmark and southern Sweden.

ground out of the question—we are justified in saying that the Irish metal halberd finds its origin in Ireland and its earliest development in that part of the country where a population lived using much flint and possessing technical skill in the shaping of it. That the artisan in flint became in turn the artisan in copper or bronze is borne out in other transitional cultures.

Much has been said of the halberd in Ireland being evidence of early connexion with Spain. While, as stated, no proof can be found to establish the idea that the Irish halberds are derived from the Spanish ones, this does not altogether negative the argument for cultural connexions. That such early interchanges with the Iberian Peninsula existed cannot be denied in face of the evidence of the Clonfinlough Stone,[1] the Moytirra beakers, the megalithic culture, the flint javelin-heads,[2] and the recurrence of the ornament of the schist idols on Irish axes and lunulae, as well as the distribution of the lunulae. It is further suggested that the Irish food-vessels have their prototype in vessels found in Portugal and the slopes of the Pyrenees,[3] while again we have influences from Malta which may have come through the Iberian Peninsula (though the route is not clear) as evidenced by the close similarity between the Newgrange double-spiral and that on the ornamental stones at Tarxien.[4] Later connexions are shown by the pithos burial of Cork[5] and by the occurrence of double-looped palstaves in Ireland.[6]

Further, the occurrence of the halberd as an important element of the early metal culture in both countries is, notwithstanding the fact that the metal ones are not closely connected, an argument for cultural connexions. We have already referred to the appearance in Ireland of the Iberian type of flint javelin-heads of which the flat sides are polished. The technique of these weapons must be connected with that of the Iberian and Nile flint halberds which also have polished surfaces; and, while there is no evidence for the existence of such in Ireland, the coming of the technique used in their manufacture is suggestive. We have further seen that in northern Ireland flint implements appear which were hafted at right angles to the shaft and which come to a pointed working-end. We are, therefore, led to suggest that the *idea* of a halberd is to be found simultaneously in Iberia and Ireland before its translation into metal. We must, however, go farther if this suggestion is to have any significance. It has already been pointed out that the general notion of a halberd is simple and likely to be found in widely distributed cultural and geographical contexts. Gaerte has seen in the human forearm holding a *coup-de-poing* the prototype of the weapon,[1] and Schmidt has voiced a similar theory, while it has been pointed out here that we also get a similar weapon by hafting the Campignian pick. When, however, we find, as in the case of the polished flint halberds, considerable care being exercised in the manufacture of the weapon, we may take it that we are dealing with the expression of an idea which has a specific significance for the craftsman. It is this idea which we believe to have existed contemporaneously in Iberia and Ireland and which must be regarded as evidence of a cultural link which was to find its expression at a slightly later period in halberds of metal.

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[1] Macalister, *Archaeology of Ireland*, 94, pl. I.

[2] Macalister, *loc. cit.* 42, with references.

[3] Childe, *Prehistory of Scotland*, 94.

[4] Mahr: Article on 'Archaeology' in *Saorstát Handbook*, 223. For good illustrations of the Tarxien stones see Sir T. Zammit, 'The Prehistoric Remains of the Maltese Islands', in *Antiquity*, iv (1930), 55.

[5] Macalister, *loc. cit.* 130.

[6] R. de Serpa Pinto, 'Activité minière et métallurgique pendant l'âge du bronze en Portugal', in *Anais da Faculdade de Ciencies do Porto*, xviii.

Having now arrived at the opinion that the Irish halberd of copper is to be regarded as of Irish origin we are faced with the difficulty of suggesting the derivation of the Spanish ones. These are in form and technique finished products. While we argue that they cannot have been the prototypes of the Irish halberds, they also, because of the difference in type, cannot have been derived from the Irish ones. A study of them in relation to the remainder of the Almería material provides a solution for the problem which appears to fit the facts. As mentioned earlier, they can be divided into two types: those with broad, rather straight bases and those with rounded, comparatively narrow bases. The latter type are easy of explanation—they are nothing more or less than daggers mounted at right angles to the shaft, and in most cases only to be differentiated from daggers by the evidence of the fragments of the wood which remain on them. We must therefore regard them as an expression in metal of the halberd idea already known from flint examples, but the method of expression is merely that of making use of the copper or bronze dagger-blade hafted in another manner. The second type (with broad base) is probably a later, because a more specialized, development; for affixing a blade to a wooden shaft a broad base with several rivets is a more serviceable fastening than a narrow base with fewer rivets. Since the dagger as such continued in use contemporaneously with this development, it seems likely that this is the explanation for the occurrence of the dagger-shaped halberd-blade in the same contexts, which yield also the broad-based variety. That we have in Spain a desire to express the halberd idea rather than a tendency to keep to a single type of halberd is borne out by the short sword (no. 6) from El Argar which was found to have been hafted transversely to the handle. The relationship indicated here between the Spanish daggers and halberds is one which, it may be objected, must also be considered in regard to the Irish material. It is, however, readily apparent that the Irish halberds, and especially the earliest types of heavy cross-section, could not be regarded as interchangeable with daggers or in any way influenced by the latter type of weapon. Only later halberds in northern Europe—and this can hardly be said to apply at all to Ireland—can be thought of as such that they could also be hafted as daggers. We must refer again to this later in respect of the British weapons.

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[1] Ebert, i, 297.

In considering the distribution of halberds we saw that the first three divisions of our Irish typological series were completely unrepresented outside Ireland. No. 1 in Scotland must be regarded as being as late as Type 5 though showing reminiscences of Type 2. It is, therefore, evident that the weapon, originating in Northern Ireland, went through a considerable process of evolution before its distribution to regions outside the country.

The route of this distribution, which is marked by those halberds standing most closely to the Irish Type 4, is plain. It crosses Scotland and leads to Denmark and southern Sweden, where we find a group of halberds so homogeneous in type and so similar to the Irish ones in character that one is constrained to think of them as undoubtedly the work of Irish craftsmen, whether made in this country or made—and the suggestion does not seem too far-fetched for the facts—by a group of metallurgists from Ireland who had settled in Scandinavia. Flat axes, Irish in form and frequently ornamented in the manner of the Irish examples, are a corroboration of this, though on certain German evidence (Dieskau) we must suppose that the earliest halberds in Scandinavia are earlier than the ornamented bronze axes though they may have arrived at the same time as the flat copper axes. They must, however, have remained in use during the period when the ornamented axes were also being manufactured, since they were still an element of Bronze Age culture in Scandinavia when the metal-hafted halberds (Årup and Klagsthorp) were imported from Germany.

Reference has been made to the interplay between flint and metal technique in northern Ireland, and it has been suggested that the craftsman in flint became in turn the craftsman in copper and bronze. Because metal is a rarer and more difficult medium, specialization must have become more a feature of the economy of life, but it is also to be thought that during the earlier period some specialization must have been in vogue. The interchange between the two mediums is even more marked in Scandinavia. While the concentration of population in ancient and modern times along the eastern coasts and islands of Denmark and along the south-western coasts of Sweden must primarily be ascribed to the soil being particularly attractive to an agricultural population, we have further the fact that the district was an important centre of flint-mining, export and working. Such activity presupposes the existence of a specialist artisan class who dealt with the flint, and who, after the introduction of metal, would, under the instruction of immigrant metallurgists, turn their attention to the new medium.

Much has been said in regard to the copying of the forms of metal artifacts in flint. Many of the very finely worked Scandinavian flint objects can only be explained as copies of metal weapons—daggers, axes, curved swords,[1] etc. The opposite process has not received the same attention, though a study of the material in Scandinavian collections provides definite evidence for it. The copper axes, for instance, usually flat imported axes or local copies of these, are also frequently long, very heavy, of rectangular (almost square) cross-section; and axes of this type can only be explained as direct copies of the flint axes of the same form.

This interchange is a further corroboration of the theory of the existence of a craftsman class who played an important role in the transition stage between the two materials. The excellence of Scandinavian flint work may have been a factor in the growth of the extremely rich early Bronze Age culture which developed there. The other factor is quite evidently the influences from other lands which found a meeting-place in Scandinavia—influences accounted for chiefly by the quest for the amber of the Baltic coasts. This quest brought, among other cultural elements, those from southern Europe (represented by ornamented bronze daggers of Italian form, etc.). Southwards along the amber route, however, must have gone the Irish cultural elements which had found a halting-place in Scandinavia, and of particular importance in the diffusion of the halberd is that route defined by the amber finds and designated by de Navarro as the Central (early Bronze Age) Route.[2]

We have not to follow this route far southwards when we meet another important cultural centre—that of the Saxo-Thuringian lands lying along the Elbe and the Saale where there is an important meeting-place of the various prehistoric cultural influences. The halberd is here given its further development by being attached to a metal shaft, and with Saxo-Thuringia as a centre the metal-shafted halberd becomes distributed over Brandenburg-Mecklenburg, and eastward to Posen and Lithuania. In each case, however, the weapon is given a local distinctiveness which distinguishes it from the parent type (discussed under typology). Others found their way northwards to Scandinavia and south-eastwards to Hungary.

We find in Saxo-Thuringia evidences of Irish influences in the shape of halberds and axes of Irish forms (Dieskau and Leubingen). The main elements of the cultural context, however, are taken over from the south-east and are part of the Aunjetitz early Bronze Age modified locally. Italian influences are shown by the daggers, and by the ornamentation of the same character which appears on some of the halberd-blades. Again the flat-tanged dagger represented in Neuenheiligen is paralleled by examples in Ireland and Great Britain.[1] The secret of the richness of this culture seems to have been the varied sources of its inspiration and the natural resources which made the region attractive—salt and perhaps copper (though there is a doubt if the copper deposits near Halle could have been worked in antiquity).

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[1] i.e. *Krummschwerter*: see Forssander, *Bulletin de la Société Royale des Lettres de Lund*, 1934–5, v, 33.

[2] 'Prehistoric routes between Northern Europe and Italy defined by the Amber trade', in *The Geographical Journal*, lxvi (December 1925), 481.

The evidence for a western route from Britain meeting the other routes near Halle is not, but for the bearing of the halberds on the question, as clear as it might be, because the flat axe at Dieskau which Childe uses as a proof of this route could equally well come via Scandinavia. The halberds, however, help on this point. There can be no doubt, judging from the vigour of the north–south route in regard to other commodities, the concentration of halberds in Scandinavia and the later reaction shown by the return thereto of metal-hafted specimens, that the northern halberd group must have made itself felt in the development of those of the Saxo-Thuringian culture, and that to a greater degree than any other group. But the typology of this Saxo-Thuringian group is such that, as we have already seen, no specimen found among its large mass of material is to be considered as being a direct Irish import. Now the differences from the Irish halberds exhibited by this group are such that, had the Saxo-Thuringian examples been derived solely from the Scandinavian ones, they would present a character closer to the Irish type. We, therefore, suggest that to a large degree the halberds along the Saale and Elbe must represent also more mixed influences due to other connexions with Ireland. These connexions we can trace from the Netherlands—the route coming thence probably up the Rhine and across western Germany. One is inclined to think that the route from Ireland to the Netherlands was twofold: along the English Channel (suggested by the comparatively Irish appearance of the Netherlands halberds and those from Ulpsrunge), and across southern Britain (suggested by the developed appearance of the Apeldorn example).

We thus see the English and Welsh halberds as marking stages on the route between Ireland and the continent, though the forms represented by the known examples suggest that most of them were made in southern Britain in imitation of Irish imports. The transformation of the Irish type in England and Wales we must attribute to the strength and individuality of the British Bronze Age culture which was such as to impress local characteristics on imported forms. The immediate element in that culture which influenced the transformation of the halberd was probably the bronze broad-based dagger.[2] It is to features of such dagger-blades that we must trace the characteristics also of the Apeldorn halberd.

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[1] See Childe's summary of the Saxo-Thuringian culture and its connexions in *Danube*, 242.

[2] e.g. Evans, *Bronze Implements*, fig. 306, from Arreton Down.

The Central European halberds (exclusive of the North German group) must be regarded as representing several influences and tendencies. The examples along the Rhine show that that river marks a route which brought halberds not only to the Hanoverian Province but also to southern Germany and Switzerland. However, we must think also of the route along the Rhine being joined near the head-waters of that river by another route which, though not so well marked, can be traced from Brittany across France; the connexion between Ireland and Brittany would have been directly by sea, though the finds of Irish lunulae make it necessary to consider Cornwall as a stage on the route. From Switzerland the route bifurcates—one branch going southwards through Italy and reaching Greece; the other reaching Greece via Austria and Hungary.

This gives us the Irish factor in the Central European group. We must, however, differentiate from this that element due to Central European development. We have seen that southern Central Europe is the focus of a group of halberds with mid-ribs of triangular section and having long, narrow blades, usually of such a form that the upper edge is at right angles to the shaft while the lower edge slopes upwards. The triangular mid-rib is probably derived from the same feature on Italian blades (of the Remedello Culture and later), while the form is a specialization of the upward trend shown by halberds in general. The main fact, however, regarding Central European halberds is that we must see in them a modified offshoot of the Irish ones, and in no sense will their typology allow us to regard them as the outcome of Spanish influences, as usually contended.

The Italian halberds, as has been shown when dealing with distribution, are a mixed group. We have the small dagger-like blades which seem to be purely local features of the Remedello Culture; again there is the bronze blade from Frosinone (no. 5) which is shown by the mark of the wood to have been a halberd,[1] and which finds its closest parallels in El Argar. The developed halberds, however, we can see only as the result of Irish influences, and in their development little seems to have been derived from the local types. The Gambara weapon we must see as a link between the Greek halberds and the Irish one of similar form, though, because this is a unique specimen in Ireland, we must regard it as a reaction and not an Irish development; so also must we regard the conical rivet-caps on one of the Irish halberds—such rivet-caps being a development of the Central European group under Italian influence, and those on the Mycenae example being derived from that group.

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[1] The grain of the wood shows. That a straight mark across a blade is not sufficient to enable us to declare it to be a halberd is shown by some of the specimens from El Argar (e.g. Siret, *Les Prem. Ages*, pl. 26, nos. 16, 21) which are unquestionably knife-daggers—being very small—but were attached to straight-ended, not arched or notched, hafts.

The geographical position of Sesklo, as well as the type of blade found there, suggests its being the outcome of influences travelling eastwards through Hungary rather than along the Mediterranean from Italy.

The place and implications of the halberd in prehistoric chronology must now be considered. Childe indicates the problem in saying that the age of the Scottish halberds 'is not well established; they certainly illustrate a superior metallurgical technique to that exemplified in the flat axes and flat daggers'.[1] I must here admit that in considering the evidence for the dating of halberds in Ireland and in Great Britain the doubtful character of the two finds (Birr and Sluie) gave me the impression that one should preferably rely on the better authenticated evidence of the late Bronze Age founders' hoards (Stoke Ferry and Islay) and that of the cist-burials (Moylough), and date the whole series at the earliest to middle Bronze Age times.

Further acquaintance with the question and with the typological development as well as the continental material convinced me, however, that the arguments for an early Bronze Age dating could not be overlooked and that they were other than the rather doubtful coupling of flat axes in the Sluie and Birr finds.

Of particular importance in this respect are the German discoveries. The cultural context in which the halberds are found in Germany is on the whole early. It is chiefly the modified Aunjetitz Culture of the Saale basin, and this dating is corroborated by the Feursbrunn find in Lower Austria. That the halberd lived on somewhat later than the early Bronze Age properly so called is shown by the Cöthen find and by the late character of the ferrule on one of the Schmöckwitz halberds. This ferrule shows openwork which is found in its earliest context in Period II of Montelius. The Meckenheim find also may be taken to show the continuance of the halberd to a somewhat later period rather than the early dating of the *Halskragen*, while if we accept the interpretation suggested here regarding the Anderlingen stone it is an indication of the same tendency.

The German finds give testimony not only of the chronological place of the halberd in relation to the continental Bronze Age but also of the relationship with the Irish system. At Dieskau the find of halberds was accompanied by a bronze axe of Irish type ornamented with stroke ornament. At Leubingen an axe of Irish or British type with low side-flanges and an incipient stop-ridge was found. Now it is evident that the halberds at Dieskau and Leubingen must be fitted into the general series at a rather late stage, since the Scandinavian material must be regarded as earlier. Further, we have seen that the Scandinavian halberds must be considered later than the first three divisions of our Irish typological series. We therefore are led to the conclusion that the earliest Irish halberds must be placed well back in the early Bronze Age scheme. We would see them as contemporaries of the earliest flat copper axes to which they are related by the technique of their workmanship. Type 4 can then be dated to the latter half of the early Bronze Age. Type 5, which is found in Ireland and Scotland only, must be middle Bronze Age in date but surviving sufficiently long to be found sometimes in late Bronze Age contexts.

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[1] *Prehistory of Scotland*, 100.

On chronological grounds we get a strengthening of the argument against the Irish halberds being derived from the El Argar specimens. There has frequently been a tendency to place the El Argar culture much earlier than is justifiable. This has been done because so many of the objects found are of copper. Bronze is, however, well known, and the culture, notwithstanding the continued use of copper, must be placed in the developed Bronze Age (that it continued over a comparatively long period is shown by the absence of any dissimilar culture which can be said to follow it in early or middle Bronze Age Spain).[1] There is no doubt of the El Argar culture being later than the beaker culture, which to some extent synchronizes with the Aunjetitz culture in central Europe. We have seen that the developed Irish halberds of Type 4 were exported, distributed over the continent, and copied locally at such a time as to fit into Aunjetitz contexts. It is therefore evident that the earliest examples of the series must be considerably earlier than the main part of the bell-beaker expansion and hence also earlier than the El Argar Culture.[2]

An absolute chronological datum is provided by the Greek blades from Mycenae and Sesklo which are both dated about 1600 B.C.[3] This coincides with a fairly advanced stage of the Irish evolution, and we must allow an interval for distribution from Ireland and a further interval for development before distribution began. It seems, therefore, justifiable to date the origin of the Irish metal halberd about 1800 B.C., and the beginning of the dispersal of Type 4 Irish halberds about a century later. The date 1800 B.C. must be slightly later than the beginning of the Copper period in this country. This date is later than that which was customary with most authorities, but is more in accord with the present-day tendency in regard to prehistoric chronology.[1]

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[1] In discussing segmented beads Leeds demonstrates the practically unmodified continuance of the El Argar culture almost to 1200 B.C. (*Homenagem a Martins Sarmento*, 402).

[2] The difference in date between the first Irish and the El Argar halberds suggested by this reasoning is such that the argument is not materially affected by the difference in opinion of the two schools of thought deriving the bell-beakers respectively from Spain and from central Europe.

[3] Unless we accept the dating of Karo (in *Die Schachtgräber von Mykenae*), who would put the shaft-graves about a century later, and so our whole chronology would be brought down by this amount.

Our date for the beginning of the Irish Copper period is approximately the same as that given for the beginning of the Beaker invasion of Britain in the Table mentioned in the footnote (B type beakers). We would, therefore, postulate as an explanation for the almost complete absence of beakers in Ireland the existence here at the time of beaker expansion into Britain of a developing metal culture of such vigour that the country was immune from invasion by the wandering beaker-folk.[2]

While we may claim to have solved certain problems regarding halberds and their place in a prehistoric European system, we have to admit that as a result of our study several other problems are raised or brought to notice more clearly. The most important of these is the question of the source of the Irish metal culture. While we do not dare to suggest an independent origin for metal-working in Ireland, the connexions with other cultures are not sufficiently clear to point to its source. A discussion of this problem would in any case lead us too far afield, and we must rest content with the hope that a study of halberds has shown something of prehistoric connexions in Europe and in particular of the part played by Ireland in the dissemination of metallurgical knowledge in the early Bronze Age.

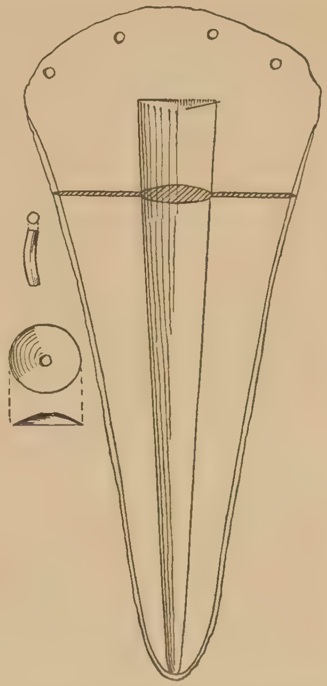

Fig. 70. Recently discovered halberd with conical-capped rivet from Breaghury, Co. Mayo (⅓)

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[1] Childe and Burkitt, 'Chronological Table of Prehistory', in *Antiquity*, 1932; Beringer, *P.Z.* xxv (1934), 143; Åberg, *Bronzezeitliche und früheisenzeitliche Chronologie.*

[2] This paper was written before the appearance of Professor Childe's 'The Antiquity of Nordic Culture', *Wiener Beiträge zur Kulturgeschichte und Linguistik*, iv (1936), 517, and 'The Antiquity of the British Bronze Age', *American Anthropologist*, N.S., 39 (1937). I am, therefore, glad to be able to add this note in proof and to remark that Professor Childe's researches from a different angle have also led him to emphasize the importance of Irish metallurgists in the general scheme of the European early Bronze Age.

LIST OF HALBERDS FOUND IN IRELAND

In the lists of halberds, which follow, these abbreviations are used:

NMD = National Museum of Ireland, Dublin.
BM = British Museum.
B = Municipal Museum and Art Gallery, Belfast.
NMS = National Museum of Scotland, Edinburgh.
P = Private Possession.
Mainz = Römisch-Germanisches Central-Museum, Mainz.
Berlin = Museum für Vor- und Frühgeschichte, Berlin.
Cambridge = University Museum for Archaeology and Ethnology.

The meaning of other abbreviations used will be obvious.

The numbers of the halberds given in these lists are the same as those printed beside the corresponding illustrations.

No.	*Locality.*	*Preserved.*	*References.*	*Remarks.*
Type 1				
1	Ireland	NMD (W. 256)	Wilde, *Cat. Bronze*, fig. 356; *P.R.I.A.* 27; Coffey, pl. 1, 1	—
2	Ireland	B (101 '06)	—	—
3	Ireland	B (1911 : 134)	—	—
Type 2				
4	Ireland	B (101 '06)	—	—
5	Tullyvallan, Co. Armagh	NMD (1927 : 44)	*Co. Louth Arch. Journ.* iii (1912–15), 32, 45	Morris (*loc. cit.*) states find-place to be on ancient road
6	Derrycassan Lake, Co. Cavan	NMD (R. 1576)	*P.R.I.A.* viii (1861–4) and *Minutes*, iv, 361; Coffey, pl. 1, 11	'Derrycassel' in the reference is evidently a mistake for Derrycassan
7	Ireland	NMD (P. 255)	Coffey, pl. 1, 2	—
8	Ireland	NMD (A. 1880)	Coffey, pl. 1, 3	—
9	Ireland	NMD (W. 269)	Wilde, *Cat. Bronze*, fig. 357; Coffey, pl. 1, 4	—
10	Ireland	Pitt-Rivers Museum, Farnham	Vallencey, *Collectanea*, iv, 62	—
11	Ireland	Limerick Museum	—	—

List of Halberds found in Ireland (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Remarks.*
Type 2 (continued)				
12	Derreensalagh, Co. (?)	BM (54.7.14.215)	—	The county is given as Offaly in the B.M. register. There is no townland of Derreensalagh in Offaly, but a Derrinsallagh occurs in Leix. I have entered the find in Leix
Type 3				
13	Castlecomer, Co. Kilkenny	BM (W. 9. 1597)	Coffey, pl. 1, 5	—
14	Ireland	NMD (W. 270)	—	
15	Nr. Mallow, Co. Cork	NMD (R. 459)	Coffey, pl. 17	—
16	Ireland	Dorchester Museum	—	—
17	Roscrea, Co. Tipperary	BM (54.7.14.214)	—	Bent blade
18	Enniskillen, Co. Fermanagh	BM (83.10.18.1)	—	—
19	Ireland	NMD (P. 257)	—	—
20	Laragh, Carrickmacross, Co. Monaghan	Not known	Coffey, pl. 1, 6	—
21	Ireland	NMD (P. 246)	Coffey, pl. 1, 10	—
22	River Bann, nr. Kilrea, Co. Derry	B	—	—
23	Ballyboley, Co. Antrim	NMD (1903. 235)	Coffey, pl. 19	—
24	Ireland	NMD (S.A. 1906. 26)	—	—
25	Ireland	NMD (42. 1920)	—	—
26	Ireland	NMD (W. 268)	—	—
27	Ireland	NMD (S.A. 1913. 67)	—	—
28	Ireland	NMS (D.K. 9)	—	—
29	Ballygawley, Co. Tyrone	BM (W.G. 1596)	—	Rivet holes may have been re-bored
30	Ireland	NMD (1906. 43)	—	—
Type 4				
31	Co. Meath	NMD (W. 238)	Wilde, *Cat. Bronze*, fig. 328; Coffey, pl. 3, 23	—
32	Offaly	NMD (1874–32)	Coffey, pl. 3, 24	—
33	Ireland	NMD (P. 252)	Coffey, pl. 1, 12	—
34	North of Ireland	P	—	—
35	Ireland	NMD (R.S.A.I. 2)	—	—
36	Leix	NMD (R. 1978)	—	—
37	Corlurgan, nr. Bailieborough, Co. Cavan	NMD (R.S.A.I. 328. 1926)	—	Said to have been found at a depth of 20 ft. in a bog
38	Ireland	P	—	—
39	Tullamore, Offaly	B	—	—
40	Ballybogey Bog, Ballymoney, Co. Antrim	Ashmolean Museum	—	Patina of blade seems to show marks of cloth wrapping
41	Bride Street, Dublin	NMD (R. 433)	—	—
42	Co. Cavan (?)	NMD (1890: 36)	—	—
43	North of Ireland	Univ. Coll., Cork	—	Very bronze-like appearance
44	Bed of River Suck (Galway-Roscommon)	NMD (1881: 24)	—	—

List of Halberds found in Ireland (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Remarks.*
Type 4 (continued)				
45	Co. Cork	Univ. Coll., Cork	—	—
46	Ireland	NMD (W. 261)	—	—
47	Ireland	NMD (W. 259)	—	—
48	Ireland	NMD (W. 143)	—	—
49	Ireland	NMD (W. 248)	Wilde, *Cat. Bronze*, fig. 328	—
50	Ireland	Alnwick Castle	—	—
51	Nr. Castlereagh, Co. Roscommon	NMD (9.10.28)	*Irish Independent*, 6. 11. '28	—
52	River Shannon (Drainage, 1850–1)	Salisbury Museum	—	—
53 54 55	Cotton Moss, Cotton, Co. Down	NMD (28.10.29)	—	See under Hoards
56	Athenry, Co. Galway	Dorchester Museum	—	—
57	Ireland	BM (90/2/15. 4)	—	—
58	Derreensalagh (?)	BM (54/7/14. 216)	—	See note to no. 12, above
59	Maryville, Blackrock, Cork	BM (49/3/1. 47)	—	—
60	Ireland	NMS (D.K. 26)	—	—
61	Ireland	Bristol Museum	—	—
62	Ireland	Bristol Museum	—	—
63	Ireland	B (9–79)	—	Unusually shaped hafting plate
64	Ireland	NMD (R. 2226)	—	—
Type 5				
65	Ireland	NMD (P. 253)	—	—
66	Ireland	NMD (W. 236)	Coffey, pl. 3, 22	—
67	Co. Meath	Pitt-Rivers Mus., Farnham	Evans, *Bronze*, fig. 331	—
68	Hill of Allen, Co. Kildare	NMD (18.3.30)	—	—
69	Ireland	Ashmolean Museum, 1927–2830	Evans, *Bronze*, p. 263 and fig. 331	—
70	Nr. Armoy, Co. Antrim	NMD (22.8.34)	—	—
71	Ireland	NMD (977 A and W. 266)	—	—
72	Ireland	St. Albans Museum	—	—
73	Ireland	NMS (D.K. 2)	—	—
74	Bellanamallard, Co. Fermanagh	BM (64/5/3. 2)	—	The find-place is spelt Bally na Mallard in the B.M. registers
75	Bantry, Co. Cork	BM (53/5/28. 2)	—	—
76	Ireland	NMD (W. 262)	Coffey, pl. 3, 31	Analysed by Prof. J. W. Mallet
77	Ballina, Co. Mayo	Cambridge (25286)	—	—
78	Ireland	Limerick	—	—
79	Ireland	Limerick	—	—
80	Ireland	Limerick	—	—
81	Ireland	Limerick	—	—
82	Ireland	B	—	—
83	Cork	NMD (S.A. 1927: 86)	—	—
84	Nr. Birr, Offaly	Not known	—	See under Hoards
85	Ireland	Zurich Museum	Lindenschmit, *A.u.h.V.*, ii, 2, 3, 7	—

List of Halberds found in Ireland (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Remarks.*
Type 5 (*continued*)				
86	Ireland	Museum, Biel (Switzerland, 1498)	—	—
87	Portora Ford, Lough Erne, Co. Fermanagh	Not known	*Catalogue of Day Sale*, p. 40, no. 287	—
88	Ireland	Museum, Stuttgart. Cast in Mainz	—	—
89	Castletown Berehaven, Co. Cork	Not known	*Catalogue of Day Sale*, p. 40, no. 286	—
90	Ireland	P	Macalister, *Ancient Ireland*, fig. 2	—
91	Lough Gur, Co. Limerick	NMD (1891: 13)	—	—
92	Moylough, Co. Sligo	NMD (4.6.28)	*J.R.S.A.I.* 59 (1929), 113	See under Hoards
93	Co. Cavan	NMD (W. 234)	—	—
94	Tullamore, Offaly	NMD (S.A. 1913–112)	*Catalogue of Day Sale*, p. 40, no. 288 and pl. XII	—
95	Keeloge Ford, Co. Leitrim	NMD (W. 263)	—	—
96	Co. Dublin	NMD (1882: 22)	—	—
97	Ireland	Univ. Coll., Cork	—	—
98	Rathfarnham, Co. Dublin	NMD (1316: 1897)	—	—
99–105	Hillswood, Co. Galway	NMD (W. 240–6)	Coffey, pl. 2; *P.R.I.A.* iv (1847–50), 565.	See under Hoards
106	Clonloghan, Co. Clare	NMD (R. 2553)	*J.R.S.A.I.* 53 (1923), 201; Coffey, pl. 3, 29	—
107	River Suck (Galway-Roscommon)	NMD (1881: 23)	—	—
108	Ireland	NMD (R. 1317)	—	—
109	Ireland	NMD (W. 271)	Wilde, *Cat. Bronze*, fig. 330; Coffey, pl. 3, 20; *Bronze Age*, p. 13, fig. 7; Bremer, *Die Stellung*; Evans, *Knossos*, ii, 173, note	Conical caps to rivets
110	Slievecoilta Commons, Co. Wexford	BM (49/3/1. 45)	*Horae Ferales*, pl. x, fig. 5	'Dug up at foot of Slieve Kileta Hill, Co. Wexford', on label. Graves mentions burial-mound with stone chamber near Sliabh Kielta, *J.R.S.A.I.* viii (1864–66), 360
111	Ireland	John Holmes, City Art Gallery, Leeds	—	—
112	Ireland	NMS (D.K. 25)	—	—
113	Ireland	NMS (D.K. 27)	—	—
114	Ireland	NMD (W. 247)	—	—
115	Ireland	NMD (W. 257)	—	—
116	Ireland	NMD (A. 1890: 1548)	—	—
117	Ireland	NMD (W. 239)	—	—
118	Ireland	NMD (W. 235)	—	—

List of Halberds found in Ireland (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Remarks.*
Type 5 (continued)				
119	Ireland	NMD (W. 237)	—	Labels on nos. 119, 120, and 121 say: '. . . same patina . . . indicating possibility of original association, details of which have been lost.'
120	Ireland	NMD (W. 265)	—	—
121	Ireland	NMD (W. 260)	—	—
122	Ireland	NMD (P. 256)	—	—
123	Ireland	NMD (1881: 196)	—	—
124	Ireland	NMD (W. 264)	—	—
125	Ballyhaise, Co. Cavan	Salisbury Museum (362 Brackstone)	—	—
126	Inchigeelagh, Co. Cork	P	*Cat. Day Sale*, p. 39, no. 284	Might be put early in the series but for elaborate ribbing
127	Letterkenny, Co. Donegal	Ashmolean Museum	Evans, *Bronze*, p. 263	See under Hoards
128	Crott, Laggagh, Co. Longford	NMD (31.7.35)	—	—
129	Ardlagheen, More, or Highlake, Co. Roscommon	NMD (28.7.34)	—	—
Type 6				
130	Ireland	NMD (1906: 42)	—	—
131	Ireland	NMD (1877: 57)	—	A black stain on the hafting-plate may be the remains of some glue-like substance
132	Kells, Co. Meath	BM (W.G. 1598)	—	—
Various Forms				
133	Ireland	BM (no number)	*Horae Ferales*, pl. x, 4. Evans, *Knossos* II, 172	—
134	Rock Forest, Co. Tipperary	NMD (W. 295)	Wilde, *Cat. Bronze*, 491 and fig. 360	—
135	Nr. Cavan	Ashmolean Museum (1927: 2832)	Evans, *Bronze*, 265, fig. 332	—
136	Co. Meath	NMD (S.A. 1900: 27)	—	—
137	Ireland	NMD (W. 267)	—	—
138	Ireland	NMD (R. 1979)	—	—
139	Ireland	NMD (W. 233)	—	—
140	Co. Cork	Not known	*Cat. Day Sale*, 40, no. 289	'The lower part of a very large halberd-blade 4½ in. wide and now about 6¼ in. long; the weapon fractured in ancient times has had a new cutting edge fashioned on the broken end.' (Day Catalogue)

List of Halberds found in Ireland (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Remarks.*
	Various Forms (*continued*)			
141	Kanturk, Co. Cork	Not known	*Cat. Day Sale*, 40, no. 289	'. . . and a similar weapon transformed at a more recent date, the broad end pierced with three holes and ground down to a cutting edge.' (Day Catalogue)
142	Ireland	Limerick Museum	—	—
143	River Ban, Co. Derry	P		Information from Dr. Mahr: 'Only 4 in. long and absolutely like a diminutive rapier except for curve of blade.'

LIST OF HALBERDS FOUND IN OTHER COUNTRIES

No.	*Locality.*	*Preserved.*	*References.*	*Type.*	*Remarks.*
		Scotland			
1	Whitleys, Stranraer, Wigtownshire	NMS (D.J. 1)	Evans, *Bronze*, 368, fig. 336	—	Four rivets, but curved blade. Combination of Types 2 and 5
2	Falkland, Fifeshire	Ashmolean Museum	Evans, *Bronze*, 269, fig. 335	4	—
3	Scotland	NMS (D.J. 7)	—	4	—
4	Galloway	NMS (D.J. 5)	—	4	—
5	Poltalloch, Argyll	NMS	—	4	—
6	Islay, Argyll	NMS (D.Q. 45)	—	4	See under Hoards
7 8 9	New Machar, Aberdeenshire	Anthropological Mus., Aberdeen Univ. (249, 250, 251)	*Catalogue of Aberdeen Univ. Museum*	4	See under Hoards
10 11 12	Kingarth, Bute	NMS (W. 2, D.J. 11, D.J. 14)	*P.S.A.S.* iv, 396; *ibid.* lvii, 132	4	—
13	Moss-side, nr. Crossaguel Abbey, Ayrshire	NMS (D.J. 3)	Munro, *Prehist. Scotland*, 197	4	—
14	Scotland	NMS (D.J. 14)	—	5	—
15	Scotland	NMS (D.J. 24	—	5	—
16	Scotland	NMS (D.J. 6)	—	5	—
17	Sluie, Edinkille, Morayshire	NMS (D.J. 4)	—	6	See under Hoards
18	Culloden, Inverness	BM (W.G. 2061)	—	6	Tested—bronze
19	Portmoak Moss, Loch Lever, Kinross-shire	NMS (D.J. 12)	—	—	Peculiar in having two sides different. One has broad mid-rib and is of halberd type; on other side mid-rib is of tapering dagger type

LIST OF HALBERDS FOUND IN OTHER COUNTRIES (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Type.*	*Remarks.*
	SCOTLAND (*continued*)				
20	Bishop's Mill, Elgin	Original in Elgin Museum. Cast in NMS (D. 15)	—	—	Fragment has halberd-like mid-rib. See under Hoards
21	Scotland	Hunterian Mus., Glasgow	*Catalogue Scottish Exhibition, Glasgow* (1911), 851, no. 32	—	—
22 23	Backside of Aldie, Kinross	Kinross Museum	—	—	Two fragments in bad condition—see under Hoards
24 25	Baile-nan-Coille, Strath-Brora, Sutherland	Dunrobin (?)	*P.S.A.S.* xvi (1882), 240	—	See under Hoards
	ENGLAND				
1	Maryport, Cumberland	BM (1905/11/6. 3)	Ebert, *Real.* iv, pl. 251	4	—
2	Faversham, Kent	Ashmolean Museum (1927 : 2356)	—	4	A tanged dagger (Ashmolean Museum) comes from same place. It is not clear if found together
3	Stoke Ferry, Norfolk	Ashmolean Museum (1927 : 2444)	Evans, *Bronze*, 270, etc.; *Proc. Soc. Antiq.* v, 425	—	See under Hoards
4	Bridlington, Yorkshire	London Museum	*Naturalist*, May 1917	4 (?)	—
5	River Thames (?), England	London Museum (A. 10952)	—	—	—
6	River Thames, at County Hall, Lambeth	London Museum (A. 27521)	*Arch. Journal*, lxxxvi, 93 and pl. IX	4	—
7	Manea in the Fen (Ely), Cambridgeshire	Cambridge	Evans, *Bronze*, 270; *Arch. Journal*, xii, 193; *Horae Fer.* x, 7; *Camb. Antiq. Soc. Cat.* 168, 184	6	—
8	Harbyrnrig, Westmoreland	BM (W.G. 2060)	*Proc. Soc. Antiq.*, 2nd ser., iii, 258; Evans, *Bronze*, fig. 337	6	—
9	Wroxeter, Shropshire	BM (1905/11/6. 1)	—	6	Said to have been found with dagger, but see discussion under Hoards
10	Alderney, Corblets, Channel Is.	Lukis Museum, Guernsey	Kendrick, *Arch. of Channel Is.*	6	—
	WALES				
1*	Glaney Wood, nr. Cwm Elan, Parish of Llansanffraid Cwm Deuddwr, Radnorshire	Not known	*Arch. Camb.*, 4th ser., vi (1875), 17; *R.C.A.M. Rads.*, no. 425; Evans, *Bronze*, 270	4	—
2	Carn-y-bont Quarry, Newport, Pembrokeshire	Carmarthen	Wheeler, *Wales*, 141; *R.C.A.M.* 802, fig. 334, ii; *Trans. Carmarthen Antiq. Soc.* xvi	4	—

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* I have to thank Miss Lily F. Chitty for bringing this example to my notice.

List of Halberds found in Other Countries (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Type.*	*Remarks.*
Wales (*continued*)					
3	Dolfrwynog, Afon Wen Valley, West Side, Llanfachreth, Merioneth	NMW	*Arch. Camb.* iv (1928), 172, with other references	4	Analysed—copper. The district contains copper and gold ores. Almost Type 5
4	Pontrhydygroes, Cardiganshire	NMW	Wheeler, *Wales*, fig. 45, 4	4	—
5 6	Tonfannau Quarry, Towyn, Merioneth	P	*Arch. Camb.* 1932, 395	6 & 4	Two halberds
7*	Pistill Dewy Hill, Towy, Llanarthney, Carmarthenshire	Not known	*Archaeologia*, xvi (1812), 365; *R.C.A.M.Carm.*, no. 209	6	—
			Germany, etc.†		
I. Wooden Handles					
1	Ulpsrunge, Kr. Buren	Berlin	—	4	—
2–3	Gross-Schwechten, nr. Stendal, Altmark	Berlin. Others in Salzwedel	Montelius, *Die Chron.* 43; *Präh. Zeit.* i (1909), 117	4	This and the following examples marked Type 4 are somewhat different from the Irish ones of Type 4
4	Obhausen, Kr. Querfurt	Halle	*Jahressch. für d. Vorgesch. d. s.-t. Länder*, v (1906), 90	4	See under Hoards
5–13	Dieskau, Saalkreis	Halle	—	4	See under Hoards
14	Rhine, nr. Mainz	Städt. Mus., Mainz	Behrens, *Bronzezeit Süddeutschlands*, 81; Reinecke, (*Alte*) *Mainzer Zeitsch.* iv (1893–1905), 341	4	—
15	Merseburg, Kr. Merseburg	Halle	—	4	
16	Nr. Homburg, Rhineland	Homburg	Reinecke, *op. cit.* (1893)	4	—
17	Bacharach, Kr. St. Goar, Coblenz	Städt. Mus., Mainz	Reinecke, *op. cit.* (1893)	4	—
18	Giebichenstein, Halle, Saalekreis, Merseburg, Saxony	Berlin	*Präh. Zeit.* (1909), 117	4	Small rivets
19	Nr. Salzburg (?)	Frankfurt a. Main. Cast in Mainz	Behrens, *Bronzezeit Süddeutschlands*, 84; Reinecke, *op. cit.* (1893) and *Germania*, xvi (1932), 269	—	There seems to be considerable confusion regarding the find-place of this example both in the conflicting statements in Reinecke's articles and in the Mainz Museum catalogue entries

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* I have to thank Miss Lily F. Chitty for bringing this example to my notice.

† I have listed the halberds from Posen and Lithuania with the German ones. This arrangement is more convenient in view of pre-war literature on the subject and particularly because of Kossinna's typological scheme.

List of Halberds found in Other Countries (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Type.*	*Remarks.*
	I. Wooden Handles (*contd.*)				
20	Neuendorf, Kr. Lauenburg	Stettin	*Monatsblätter* (1891), 28; Kunkel, *Pommersche Urgeschichte in Bildern*, pl. 34; Montelius, *Die Chron.*, fig. 278 and p. 110	—	Position of rivet-holes show it to be halberd-blade
21	From the Oder (Pomeranian border)	Stettin	Kunkel, *op. cit.*, pl. 34	—	Sheet gold on both sides of the hafting-plate
22	Leubingen, Kr. Ekhartsbeigal	Halle	—	—	See under Hoards
23	Duisburg, nr. Düsseldorf	Nürnberg	Reinecke, *op. cit.* (1893)	—	Dagger-like, but position of rivets suggests halberd
24	Bossee, Schleswig	Kiel	—	—	Base gone; no knowledge of position of rivet-holes
25	Cöthen	Cöthen	—	—	See under hoards
26	Apeldorn, Kr. Meppen	P. Cast in Mainz	Sprockhoff, 'Drei bemerkenswerte Bronzen aus Niedersachsen', in *Nachrichten aus Niedersachsens Urgeschichte*, 1932, 70	6	Four rivet-holes suggest Type 6, but an arrangement of three raised ribs is unusual
27	Meckenheim, nr. Neustadt, Rheinpfalz	Speyer	Reinecke, 'Ein frühbronzezeitlicher Depotfund aus der Pfalz', in *Germania*, xvi (1932), 269	—	See under Hoards
28	Augsburg	Augsburg	—	—	No drawing available
	II. Metal Shafts— *Kossinna's Type I:*			*Schmidt: Type.*	
29	Paradeplatz, Halle	Halle	Montelius, *Die Chron.* 28	II a	—
30	Jägersberg. nr. Halle	Halle	*P.Z.* i (1909), 121, 122	II a	—
31	Canena, Saalkreis	Berlin	*P.Z.* i (1909), 117	II a	—
32–6	Dieskau, Saalkreis	Halle	—	II a & II b	See under Hoards
37	Laufen a. d. Salzach	Nürnberg. Cast in Mainz	—	II b (?)	—
38–41	Welbsleben, Mansfelder Gebirgskreis	Halle	—	—	See under Hoards
42	West of the Elbe (no further information available)	Wernigerode. Reproduction in Mainz	Montelius, *Die Chron.*, fig. 71	?	—
43	Abtsdorf-Bruntal, Laufen		Reinecke, *op. cit.* (1932), with references	?	—
44	Kuttlau, Kr. Glogau	Berlin	—	II a	See under Hoards
	Kossinna's Type II:				
45	Langenstein, south of Halberstadt	Braunschweig	—	?	See under Hoards

List of Halberds found in Other Countries (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Schmidt: Type.*	*Remarks.*
	II. Metal Shafts (*contd.*)— *Kossinna's Type II* (*contd.*):				
46	Stubendorf, nr. Dargun	Schwerin	—	IIb (?)	See under Hoards
47–9	Blengow, Amt Buchow	Schwerin and Copenhagen?	—	IIb	See under Hoards
50	Bossee, Schleswig	Kiel	Montelius, *Die Chron.* 28	IIb	Found in a barrow. No further information and do not know if found with no. 24 (above)
51	West of the Elbe (no further information available)	P	Montelius, *Die Chron.* 28	IIb	—
52	Brunn, nr. Trieplatz, Kr. Neuruppin	Neuruppin. Cast in Mainz	Montelius, *Die Chron.* 28	?	—
53–4	Trieplatz, nr. Neustadt, Kr. Neuruppin	Neuruppin (53). BM (98/6/17. 1) (54)	Montelius, *Die Chron.* 28	IIb	The two seem to have been found together in a bog
55–6	Smöckwitz, Kr. Teltow	Berlin	—	IIb	See under Hoards
57	Metzelthin, Kr. Ruppin	? Cast in Märkisches Museum, Berlin	*Landeskunde der Provinz Brandenburg*, iii, 389 and fig. 211	?	—
58	Hansdorf, nr. Pustohl	Schwerin	Montelius, *Die Chron.* 28	IIb	—
59	Grimmen, west of Greifswald	Stralsund	Montelius, *Die Chron.* 28; C Kunkel, *Pommersche Urgeschichte in Bildern*, pl. 34	IIb (?)	—
60	Meisterwalde, Kr. Danziger Höhe	P	Montelius, *Die Chron.*, Kossinna in *Mannus*, ix, 157	IIb	—
61	Bethkenhammer, nr. Jastrovi, Kr. Deutsch-Krone	Berlin	*P.Z.*, i (1909), 117; Bastian and Voss, *Die Bronze-Schwerter des Königlichen Museums zu Berlin*, pl. vi, 6*a*, 6*b*	IIa	—
	Kossinna's Type III:				
62	Inowraclaw, nr. Goplosee, S.W. of Thorn, Posen	Univ. Mus., Krakau	Montelius, *Die Chron.* 28; *Mit. d. Anthrop. Ges. in Wien*, ix (1880), 220	?	—
63	Junzewo, S.W. of Bromberg, Posen	Bromberg	Montelius, *Die Chron.* 28, fig. 70	IIb	—
64 & 65	Granowo, Kr. Gratz, Posen	Not known	—	—	See under Hoards. One seems to be of Type K I; the other of Type K III
66	Schroda, Posen	Posen	—	—	See under Hoards
67	Kr. Kowno, Lithuania	Wilna	Montelius, *Die Chron.* 28; *Catalog Wilna*, pl. iii, 1; Ebert, xiii, 6	IIa	—

LIST OF HALBERDS FOUND IN OTHER COUNTRIES (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Schmidt: Type.*	*Remarks.*
II.	METAL SHAFTS (*contd.*)— *Various or Unknown Types:*				
68	Kuszczewo, Kr. Nieszawa, Posen	Not known	Richthofen, 'Zum Stand der Vorgeschichtsforschung in Posen und dem westlichen Kongresspolen' in *Mannus*, xvi, 1924	?	—
69	Kr. Ponewesch, Lithuania	Not known	Ebert, xiii, 6	—	—
70	Posen	P (?)	Montelius, *Die Chron.* 28	?	—
71	Hitzdorf, Kr. Arnswalde, Neumark	Märkisches Museum, Berlin	Kiekebusch, 'Der Bronzefund von Hitzdorf, Kr. Arnswalde, Neumark' in *Brandenburgia*, xl (1931), Heft 11–12	—	See under Hoards Dagger-like blades
72	Gross-Schwechten	Berlin	—	—	See under Hoards
73	Pustohl, Amt Buckow	Schwerin	—	—	See under Hoards
74	South Holstein	Lost	Montelius, *Die Chron.* 28	—	—
75–6	Neuenheiligen, nr. Langensalza, Erfurt	BM (in part)	—	—	See under Hoards
77	Weiserasteig, in Papierfels, Bavaria	(?)	Rick, *Fundberichte aus Schwaben*; Márton, *P.Z.* xxii (1931), 21	?	May be Type K II

FRANCE

				Type.	
1	Ris Orangis, S. et O.	St-Germain	Reinach, *Album . . . Musée des Antiquités Nationales à Saint-Germain-en-Laye*, pl. 13	—	Like Type 4 and Irish in character but having had at least four comparatively small rivets
2	Mantelle, Eure	? Cast in St-Germain	Coutil, *Période du Bronze du Hallstatt en Normandie, dans le Jura et en Alsace*; Reprinted from *L'Anthropologie*, date not given	4	Same example figured by Coutil, pl. 1, but locality given as Les Andelys, Le Bucaillet (Eure)
3*	From R. Loire at Nantes	Nantes	Leeds, *Archaeologia*, lxxvi, 223†	—	—
4*	Probably neighbourhood of Nantes	Nantes	—	—	Heavy blade, seems to be a halberd, similar to but smaller than no. 3
5	Mâcon (S. et L.)	Cast in St-Germain	Reinach, *op. cit.*, pl. 13, 723	—	May be dagger, but has halberd-like appearance

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* I am indebted to Mr. W. F. Grimes for information regarding the Nantes halberds, and to Miss Lily F. Chitty for bringing the note in Mr. Leeds's article to my notice.

† Mr. Leeds mentions a hoard of eight flat celts and a halberd from the bed of the River Loire. There is no record of this on the Nantes Museum labels or in the Catalogue. Little value can be attached to evidence of association of objects from the bed of a river.

List of Halberds found in Other Countries (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Type.*	*Remarks.*
France (*continued*)					
6	St-Fiacre, Melrand, Morbihan	Ashmolean	—	—	See under Hoards. Probably not a true halberd
			Italy		
1	Montemerano, nr. Saturnia, Prov. of Grosseta	Firenze	—	—	See under Hoards. Irish type rivets. Similar to Type 4—there may have been a third rivet
2	Calvatore, Prov. of Cremona	BM (80/12/14. 1)	Montelius, *Civ. Prim. en Italie*, pl. 33, 7	—	—
3	Etruria (no further information)	Cambridge (F.B. 256)	—	—	—
4	Gambara, nr. Brescia	Not known	Evans, *Knossos*, ii, 173, with reference	—	See under Mycenaean example
5	Frosinone	BM	—	—	Small, but the marks of the wood show it to have been a halberd
6	Rinaldone, nr. Viterbo	?	—	—	See under Hoards
7	Trana	?	Ebert, xiii, 419, with reference	—	—
			Scandinavia *		
1	Dagstorps by, Harjagers H., Skåne, Sweden	Stockholm	Montelius, *Minnen*, fig. 824	4	—
2	Denmark	Copenhagen	Montelius, *Die Chron.*, fig. 208	4	—
3	Denmark	Copenhagen	—	4	—
4	Pederstrup, Ballerup S., Smorum H., Copenhagen Amt, Denmark	Copenhagen	—	4	Found at depth of 60 cm. in bog. Wooden handle also found but not preserved
5	Southern Seeland, Denmark	Copenhagen	—	4	—
6	Aspørup S., Vends. H., Odense Amt, Denmark	Copenhagen	S. Müller, *Ordning af Broncealderen*, fig. 155	4	—
7	Stakagarden, Langhen, Kind H., Vestergotland, Sweden	Götheborg	—	4	—
8	Sønder Aldum, Stenderup S., Hatting H., Vejle Amt, Denmark	Aarus	—	4	—
9	Sendager, Gisler S., Gudme H., Svendborg Amt, Denmark	Copenhagen	—	4	—
10	Denmark	Copenhagen	—	4	—
11	Nr. Malmö, Skåne, Sweden	Stockholm	Montelius, *Minnen*, fig. 826; *Die Chron.*, fig. 217	4	—

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* It is more convenient to list together the halberds from Scandinavia (Denmark and Sweden are the only countries represented).

List of Halberds found in Other Countries (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Type.*	*Remarks.*
	Scandinavia (*continued*)				
12	Sweden	Götheborg	—	4	—
13	Hvoruum S., Onsild H., Denmark	Copenhagen	—	4	—
14	Gessie, nr. Malmö, Skåne, Sweden	Lund	—	4	—
15	Stangby Mosse, W. Skåne, Sweden	Lund	—	4	—
16	Karaby, W. Skåne, Sweden	Lund	—	4	Point cut on weapon in modern times
17	Gotland, Sweden	Göteborg	—	4	Nos. 16–18 though marked as Type 4 are less similar to the Irish Type 4 than nos. 1–15, which are remarkably Irish in character
18	Vester Skjerninge, Salling H., Jutland, Denmark	Copenhagen	—	4	—
19	Naesbyborea, Broby S., Odense H., Funen, Denmark	Copenhagen	—	4	—
20	Vexo S., Halstykke H., Denmark	Copenhagen	—	—	—
21	Denmark	Copenhagen	Madsen, *Broncealdern-Suiter*, pl. xi, 15	—	Two raised ribs; cf. Germany, no. 26
22	Leiregaard, Lyngby S., Voldborg H., Copenhagen, Denmark	Copenhagen	—	—	—
23	Kogtved Mose, Svenborg Amt, Denmark	Odense	—	—	—
24	Dösjöbro, V. Karaby, Harjagers S., Skåne, Sweden	Stockholm	Montelius, *Die Chron.*, fig. 218; *Minnen*, fig. 825	—	—
25	Klagstorp, near Malmö, Sweden	Stockholm	Montelius, *Die Chron.*, fig. 215	K II	—
26	Årup, N. W. Skåne, Sweden	Stockholm	Montelius, *Die Chron.*, fig. 216; *Guide to Nat Hist. Museum, Stockholm* (1887)	K II	—
			Switzerland		
1	Jihl, nr. Brügg	Bern	—	4	—
2	Roches, Aigles	Bern	Kraft, 'Die Stellung der Schweiz innerhalb der bronzezeitlichen Kulturgruppen Mitteleuropas', pl. 3, fig. 9, in *Anzeiger für Schweizerische Altertumskunde*, Neue Folge, xxix (1927)	—	One mentioned by Lindenschmit, *A.u.h.V.* i. 6, 2, 4, from near Villeneuve, Waadtland, seems to be the same example
3	Zihlure, Kt. Bern	Biel	—	—	From a Pfahlbau
4	Vétroz, Kt. Wallis	Zürich	—	—	See under Hoards

LIST OF HALBERDS FOUND IN OTHER COUNTRIES (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Type.*	*Remarks.*
SWITZERLAND (*continued*)					
5	Aadorf, Bezirk Frauenfeld, Kt. Thurgau	Zürich	Keller-Tarnuzzer and Reinerth, *Urgeschichte des Thurgaus*	—	Found 1–1½ m. deep at bottom of bog. Probably a halberd (bronze)
6	La Bordonette, Lausanne	Lausanne (?)	Kraft, *op. cit.*, pl. III, 16	6	The illustration seems to be that of a halberd
7	La Raisse	Neuchâtel	—	—	Evidently copper. Probably a halberd
			NETHERLANDS		
1–2	Wageningen, Veluwe, Gelderland	Leiden	—	4	See under Hoards
3	Nijmwegen	Leiden. Cast in Mainz	Jansen, *De Germanen: en Noordsche Monumenten van het Museum te Leiden*; Reinecke, (*Alte*) *Mainz. Zeitschr.* iv (1893–1905), 341	4	—
			AUSTRIA		
1	Paltendorf	Götheborg	—	—	—
2	Prenartsberg, Ger.-Bez. Hollabrunn	Hollabrunn	Beringer, 'Frühzeitliche Stabdolche aus Niederösterreich', in *Präh. Zeitsch.* xxv (1934), 130	4	—
3	Bruck a. d. Leitha	Bruck	As no. 2	6	The largest halberd-blade known
4	Feuersbrunn, Ger.-Bez. Kirchberg a. W.	Vienna	As no. 2	—	See under Hoards
5	Ried, Oberinntal	Innsbruck	—	—	See under Hoards
			HUNGARY		
1	Szöny, Kom. Komorn	Berlin	Márton, 'Dolchstäbe aus Ungarn', in *P.Z.* xxii (1931), 18	—	—
2	Dunapentele, Komitat Fehér	—	As no. 1	—	—
3	Pilin	—	As no. 1	—	—
4	Hungary	Budapest	As no. 1	—	—
5	Hungary	—	As no. 1	—	—
6	Ipoly-Fluss, Kom. Hont	Budapest	As no. 1	K II	—
			GREECE		
1	Mycenae (Sixth Shaft Grave)	Athens	—	—	See under Hoards
2	Sesklo, Tomb 25	Volo	—	—	See under Hoards

List of Halberds found in Other Countries (*continued*)

No.	*Locality.*	*Preserved.*	*References.*	*Type.*	*Remarks.*
	Greece (*continued*)				
3	Amorgos	Athens (?)	Montelius, *Die Chron.* 166 and fig. 393; Childe, *Dawn*, 46	—	This weapon from a Middle Cycladic (or later) grave is claimed by Montelius and Childe to be a halberd. It has that general appearance but seems to be too short to be regarded as anything but a dagger. (Length $4\frac{3}{8}$ inches)
			Spain		
1–6	El Argar	BM and Brussels	Siret, pl. 32, 33	—	See under Hoards
7	El Argar	Brussels	—	—	Very small (14·3 cm.), but remains of wooden shaft show it to be a halberd
8	El Argar	Ashmolean	—	—	—
9–11	El Oficio	BM and Brussels	Siret, pl. 62, 63, 69	—	See under Hoards
12	El Oficio	?	Siret, Texte, 196	—	No figure given, merely mentioned by Siret
13–14	Fuente Alamo	Brussels and Ashmolean	Siret, pl. 66	—	See under Hoards
15	Fuente Alamo	Brussels	Siret, pl. 65, 69	—	—
16	Alicante	Barcelona	Schmidt in *Opuscula . . . Montelio*, 75, note; Ebert, x, 370; Åberg, *La Civ. Énéol.*, 164	—	—
17	Cabanes; Prov. Castellon	?	Ebert, x, 370	—	—
18	Ciudad Real, Spain	Ashmolean	Evans, *Bronze*, 271; Siret, Texte, 265	—	—
19	Cuenca, Spain	St. Albans	—	—	A socketed halberd—unusual. No further particulars available
20	Ronfeiro, nr. Nocelo da Pena Giuro de Limia	Orense	Schmidt, *loc. cit.*	—	—
			Portugal		
1–2	Carrupatas, Macedo de Cavaleiros, Prov. Tras-os-Montes	Guimaraës	—	4	No further information. Not known if found together
3	Alto de Perieras, nr. Vimioso, Prov. Tras-os-Montes	Geological Mus., Lisbon	Delgado, *Communications de la Commission de Travaux Géologiques*, tome II, fasc. 1	4	Analysed: copper 96·87, tin —, zinc 3·10; difference 0·03

ADDENDUM

Halberds brought to my notice after writing the above lists:

Locality.	*Where Preserved.*	*Remarks.*
IRELAND		
Loughnaglack, Co. Monaghan	P	From a lake well known as a crannóg site. Type 5
Adare, Co. Limerick	P	I have not seen this halberd. Type not known
North of Ireland	Yorkshire Museum	Type 4
Co. Armagh or Co. Monaghan (probably)	Armagh Museum	Three halberds—not associated. One Type 4, one Type 3, and one (broken) Type 4 (?)
Breaghury, Ballina, Co. Mayo (fig. 70)	NMD	Type 6. One rivet survives with two conical rivet-caps. The combination of the late rivet types with a halberd of our sixth class lends weight to the typological system suggested in this paper. Recently found in bog 5 ft. below surface
SCOTLAND		
Lands of Clavar and Cantray, Inverness	Morven Institute of Archaeological Research, London	Type 6. Information from Mr. Stuart Piggott
GERMANY		
Göttingen	Ethnographische Sammlung, University, Göttingen	All these examples were brought to my notice by Dr. Neumann, Jena. I have seen none of them, nor drawings of them. The first five are blades only, but some may originally have had metal handles. The last two retain the head of the metal shaft
Helfta, Mansfelder Seekreis	Duisburg	
Schraplau, Mansfelder Seekreis	Not known	
Merseburg	München-Gladbach	
Not known	Jena	
Warnstedt, Kr. Aschersleben	Quedlinburg	
Not known	Mus. Zerbst, Anhalt	

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